Construction

A Manufacturers Record Publication

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There is always one best type of wire rope for every application and the TIGER BRAND Wire Rope Specialist can help you select the right ropes for your particular needs. He'll check your equipment, keep you posted on proper rope care, and a dozen other things to assure long service life at low unit cost.

To help you maintain these operating standards, we have prepared a booklet entitled, "Valuable Facts about the use and care of Wire Rope." Every key man on your operating staff should be supplied with this much needed information. Send the handy coupon for your copy.

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NORTHWESTS

for Blythe Brothers, Inc.
Charlotte, N. C.

FORTY-EIGHT Machines is a lot of equipment in any man's language. Year after year, this well-known, successful southern outfit has been buying Northwests. You don't repeat order equipment like that without having received service!

You can't afford anything but the best for the heart of the job—for the *Key Spots* where profit begins. Ask Northwest repeat order buyers like Blythe Brothers, Inc., and plan ahead to have a Northwest.

NORTHWEST ENGINEERING COMPANY
135 South LaSalle Street
Chicago 3, Illinois

48

There's a lot of endorsement in 33 ORDERS

33

Another Northwest for Blythe Brothers of Charlotte, N. C.

Thirty-three machines are a lot of machines in any man's language and Blythe Brothers Company is one of the outstanding and successful contractors of the south.

Nobody has to guess very far as to why this company has bought so many Northwests. There can be only one answer—success makes money—the kind of performance that makes money—the kind of performance you'd like to have.

From coast to coast you can list name after name of lasting endorsement than a repeat order. Check into it yourself while you are planning ahead.

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McClung-Logan Equip. Co.

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QUESTION:

What manufactured product actually costs the workingman less today than in 1939?

ANSWER:

CEMENT

Today the average production worker in manufacturing industries earns 130% more each week than he did in 1939. His raise in pay is nearly *triple* the 46% increase in the wholesale price of cement during the same period.

This comparison is based on official reports from the U. S. Bureau of Labor Statistics as of December, 1948. Figure it your way—figure it *any* way—and you'll find it's true. Cement costs less today. Cement is *cheap*.

Today, more than ever, cement is your best buy!

Cumberland

PORTLAND CEMENT COMPANY

Chattanooga Bank Building • • Chattanooga 2, Tenn.

Portland — High Early Strength — Air Entraining — Masonry

Cumberland Cements

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Construction

VOL. 16 NO. 4

APRIL 1949

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WM. E. McCORD
Advertising Manager

L. H. HOUCK, Correspondent
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Chesapeake Bay Bridge Proposals Rejected by Maryland Commission

Maryland last month received bids for the substructure of the proposed Chesapeake Bay bridge, rejected the one proposal offered as too high and asked legislature approval of a negotiated contract.

Merritt-Chapman & Scott Corp. and Raymond Concrete Pile Co., of New York, combined with the Arundel Corp., of Baltimore, to make the $23,772,000 bid for the substructure. This was two-thirds above the estimate of J. E. Greiner Co., the consulting engineers.

Bids opened previously had revealed the low proposal for the superstructure of the 4.3-mile bridge to be eighteen per cent above the engineer's estimate. Bethlehem Steel Co. made the $16,854,104 proposal for that part of the project.

State legislators subsequently were asked and turned down a proposal to pass a bill to allow negotiation of contracts for completion of the project. Contractors—Nello L. Teer, of Durham, N. C., and C. J. Langenfelder & Son, Inc., of Baltimore—are now engaged on constructing the approaches for the project, cost of which has been estimated at from $37,500,000 to $46,000,000.

Beginning with the western abutment at Sandy Point, below Annapolis, the bridge deck will be carried on a series of I-beam spans, each 600 feet long and totaling 1843.50 feet. Following these beam spans, the superstructure will embrace 1,318 feet of deck girder spans, 2,850 feet of simple deck truss spans and 1,442 feet of deck cantilever truss construction to the crossing of the main bay sailing course.

The main span will be a suspension unit of 1,600 feet with side anchor spans of 660 feet each. Continuing easterly from the main span, would be a series of deck cantilever trusses totaling 4,681 feet to a secondary navigation channel opening spanned by a through cantilever truss, with a main span of 780 feet and anchor arms 471 feet in length. Deck girder spans 2,230.5 feet long, I-beam spans 2,274 feet long and a 1,757.5-foot causeway would complete the project.

Three types of substructure, none of which employ unusual or untried methods of construction, will be used. Pile bents will be used for the eastern and western approach sections of the bridge. Of conventional design, these bents will be of precast reinforced concrete or concrete protected steel H-piles supporting reinforced concrete caps. All piers, except those supporting and furnishing the anchorages for the suspension bridge, will be of concrete construction carried on steel H or tube piling.

The main and anchorage piers for the suspension bridge will be of cellular, concrete construction. Except for the anchorages, the lower portions of these piers will be prefabricated upon ways, or within dry docks, floated and towed into position. The lower sections of the anchorage piers will be built in place upon the sand islands proposed as pro-

(Continued on page 64)

NO MATTER *HOW* YOU FIGURE

YOUR BEST BUY IS . . .

CRAWLER TRACTORS
POWER UNITS
DIESEL ENGINES
WHEEL TRACTORS

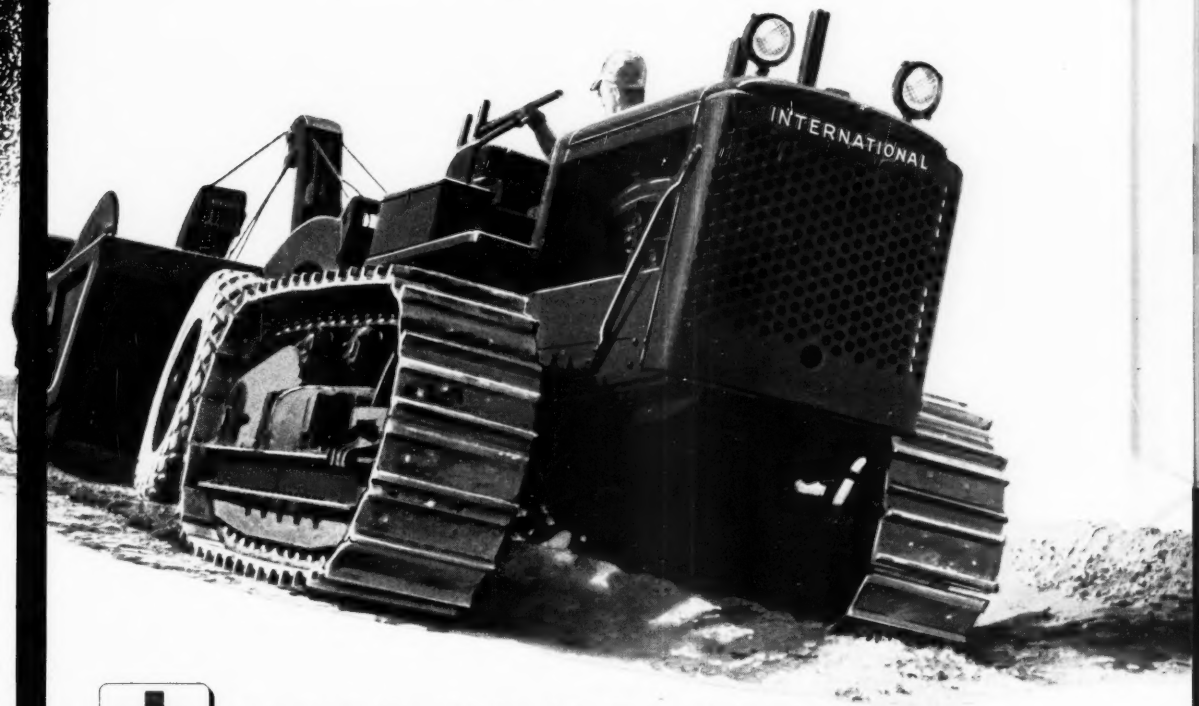
INTERNATIONAL

WHEN YOUR POWER IS INTERNATIONAL

Base your bidding on big pay yardage. Fit International Tractors and matched earthmoving equipment into your planning and reduce the downtime on your jobs. Rugged Internationals are built to carry on, hour after hour, day after day at minimum cost for fuel, lubricants and maintenance. And because they are backed up by a nation-wide, localized service organization, you have assurance of long-term satisfaction from Internationals.

Before you figure your bids, check your power and equipment needs with your International Industrial Power Distributor. He sells and services the full line of International tractors and International-powered earthmoving equipment. NO MATTER HOW YOU FIGURE — here is the power and equipment that will dig in and move profit-making yardages.

INTERNATIONAL HARVESTER COMPANY, Chicago



INTERNATIONAL HARVESTER

Hear James Melton and "Harvest of Stars" every Sunday, NBC. See your local newspaper for time and station.

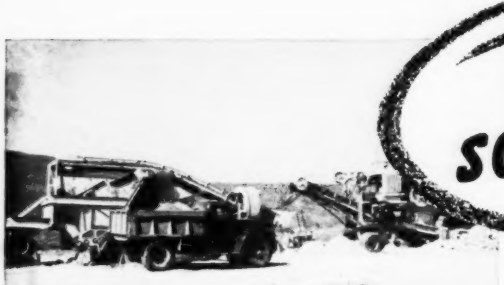
Industrial Power

Cedarapids

Built by IOWA

LOW INITIAL COST *plus* **LOW MAINTENANCE COSTS**

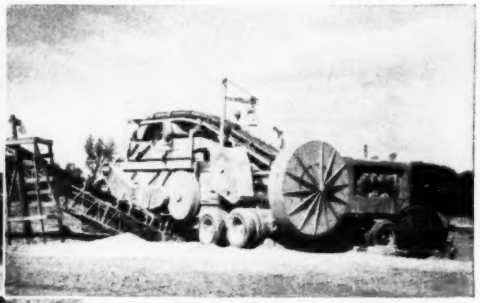
CRUSHING AND SCREENING PLANTS



900 CUBIC YARDS of 1" material and 725 cubic yards of ¾" produced in 9 hours by this Cedarapids Portable Unitized Crushing and Screening Plant in Wisconsin. The plant consists of a jaw crusher primary and a roll crusher secondary.

Low first cost, low operating cost, minimum repairs and maintenance — that's where your annual savings *begin* with Cedarapids Crushing and Screening Plants! And savings *continue*, year after year! With Cedarapids plants on the job, you get a combination of high capacity flexibility, portability and low operating costs that keep you consistently in the money. Smooth, balanced coordination of screens, crushers and conveyors ... instant adaptation to a wide variety of jobs ... fast, easy set-up and take-down ... all add up to more profitable operation. There's a wide range of sizes and types for every production need. From the smallest unit to the largest plant, Cedarapids Crushing and Screening equipment is built for high output at low cost.

35 CUBIC YARDS an hour with 55% of material crushed. That's easy production for this Cedarapids Pitmaster, the smallest complete tandem portable crushing and screening plant in the Iowa line. Operating in Canada.



260 TONS per hour with 35% crushing of minus 1" material! That's the production record of this Cedarapids Master Tandem Portable Crushing and Screening Plant in Colorado. *{above}*

100 CUBIC YARDS per hour of ¾" aggregate from this Cedarapids Junior Tandem. This plant is operating between the Elk River and Big Lake in Minnesota, producing aggregate for gravel surfacing shoulder and for black topping intersections.

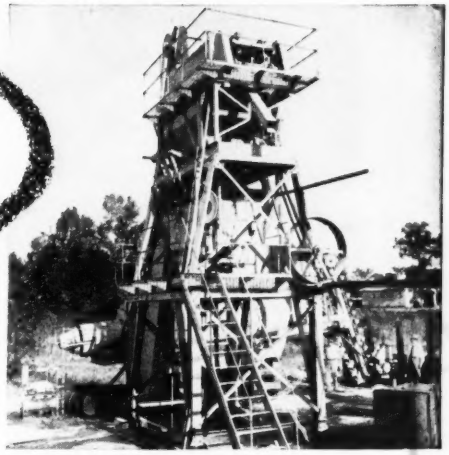
THE IOWA LINE *of Material Handling Equipment is distributed by*
G. C. PHILLIPS TRACTOR CO., INC., Birmingham 3, Ala.; KERN LIMERICK, INC., Little Rock, Ark.; PERSINGERS, INC., P. O. Box 1865, 520 Elizabeth St., Charlestown, W. Va.; PERSINGERS SUPPLY CO., Williamson, W. Va.; FLORIDA-GEORGIA TRACTOR CO., Jacksonville, Miami, Lakeland, Tallahassee and Orlando, Fla., Savannah and Waycross, Ga.; YANCEY BROTHERS CO., Atlanta and Augusta, Ga.; THE G. W. VAN KEPPEL CO., Kansas City, Mo.; WILSON MACHINERY & SUPPLY CO., Lexington 15, Ky.; McCLUNG-LOGAN EQUIPMENT CO., INC., Baltimore, Md.; JACKSON ROAD EQUIPMENT CO., Jackson, Miss.; E. F. MARSH CO., St. Louis 10, Mo.; NORTH CAROLINA EQUIPMENT CO., Raleigh, Charlotte, Asheville & Wilmington, N. C.; SOUTHWEST MACHINERY CO., Oklahoma City, Guymon, Hobart and Tulsa, Okla.; SOUTHERN EQUIPMENT SALES CO., Columbia & Greenville, S. C.; ROAD BUILDERS EQUIPMENT CO., Memphis 2, Tenn.; OSBORNE EQUIPMENT CO., Knoxville and Chattanooga, Tenn.; BROWNING-FERRIS MACHINERY CO., Dallas and Houston, Texas; TRI-STATE EQUIPMENT CO., El Paso and Odessa, Texas; CONTRACTORS MACHINERY CO., San Antonio, Texas; VIRGINIA TRACTOR CO., INC., Richmond, Roanoke, Waynesboro and Norfolk, Va.; WEST VIRGINIA MINE SUPPLY CO., Clarksburg, W. Va.; THOMPSON & GREEN MACHINERY CO., Nashville, Tenn.; DUNHAM-PUGH CO., INC., 1335 Choctaw Rd., P. O. Box 1068, Baton Rouge, La.

Cedarapids

Built by IOWA

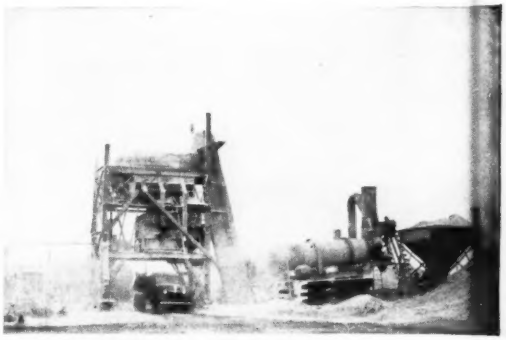
assure LOW COST PER YEAR

BITUMINOUS MIXING PLANTS



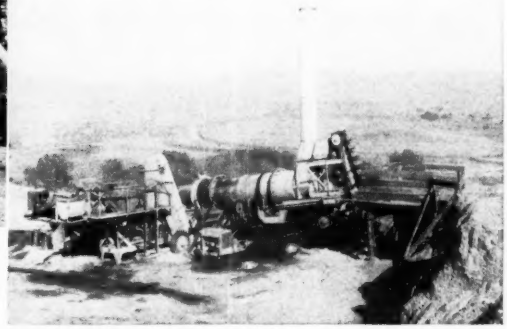
200 TO 250 TONS per day produced by this Cedarapids 1000 lb. Model "A" Bituminous Mixing Plant in Alabama. Another production record for Cedarapids.

WHATEVER your bituminous paving projects, you'll get bigger annual savings when you put Cedarapids Bituminous Mixing Plants on the job. Every feature is engineered for high tonnages accurately mixed at lowest possible cost. Perfectly matched screens, batchers, pug mills, elevators and driers assure a smooth, steady flow of uniform mixes that consistently meet the most exacting specifications. Finger-tip operating control assures fast, easy operation. Low over-all travelling dimensions and weight simplify transportation problems. Rock-bottom initial cost, plus low operating and maintenance costs, keep you in the profit picture. Cedarapids Portable, Stationary, Batch-Type and Continuous-Mix Plants are available in sizes and types for every requirement. When you buy a Bituminous Mixing Plant, buy the best — buy Cedarapids.



100,000 TONS of thoroughly mixed bituminous material produced by this 3000 lb. Cedarapids Model "E" Batch-Type Bituminous Mixing Plant and another 2000 lb. Model "E" Batch-Type Plant for resurfacing airport runways. *(right)*

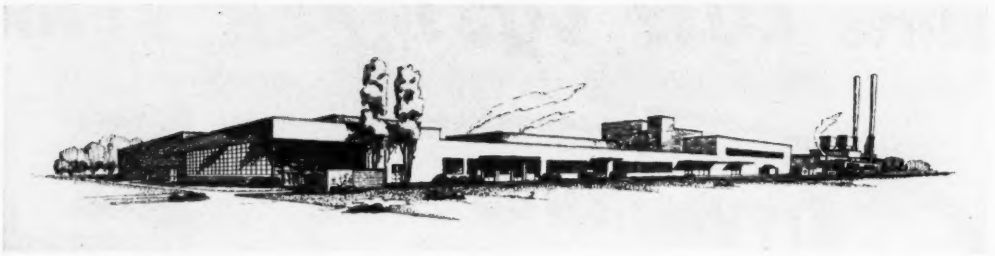
As much as **350 TONS** per day of bituminous materials, thoroughly mixed, were produced by this Cedarapids Super-Portable Model "FA" in Ohio. *(above)*



20 TO 30 TONS per hour production is obtained from this Cedarapids Portable Patchmaster, a volumetric type bituminous mixing plant in Iowa.

IOWA MANUFACTURING COMPANY

Cedar Rapids, Iowa, U.S.A.



Above—New multi-million dollar plant to be erected on an 800-acre tract along the Wateree River, three miles south of Camden, S. C., by E. I. du Pont de Nemours & Co. for manufacture of Orlon acrylic fiber, new synthetic material developed in that Wilmington, Del., concern's laboratories. The plant itself will occupy an area of about 20 acres. Dimensions of the main factory, not including the power house and other structures, will be about 300 by 600 feet, combining both single and multiple-story heights. Construction to be structural steel with jumbo brick walls. Interior walls will be largely tile. Main part of the structure will be air conditioned. The coal-fueled power house will generate steam for heating and processing only. Electricity will be purchased. Water will be obtained from deep wells. Construction is by the DuPont engineering department, with James D. Wilson, field project manager. Director of construction of many DuPont plants, the more immediate ones being at Parkersburg and Houston, Mr. Wilson is assisted by James McCook, assistant field project manager; Gaff T. Cooper, control superintendent; Charles Eggleston, service superintendent; R. H. McNew, planning superintendent; O. H. Bynum, safety engineer, and Ray Ryan, purchasing agent.

Below—Bids will be opened April 14 by the Public Buildings Administration for erection of the extension to the terminal building at the Washington National Airport. The present arc-shaped structure will be elongated about 280 feet. Construction will be reinforced concrete. Exterior walls will carry out in general the strip windows of the existing building. Public spaces will have terrazzo floors with plaster walls and acoustic ceilings. Offices will have asphalt tile floors with plastered walls. Most areas will be air conditioned and illuminated by fluorescent lights.

First Quarter Value of South's Contracts Up Five Percent To $688,024,000

SOUTH'S CONSTRUCTION BY STATES

	March, 1949		Contracts Awarded First Three Months	Contracts Awarded First Three Months
	Contracts Awarded	Contracts to be Awarded	1949	1948
Alabama	$6,933,000	$16,530,000	$18,698,000	$55,836,000
Arkansas	2,004,000	3,170,000	7,055,000	26,165,000
District of Columbia	1,171,000	5,149,000	27,460,000	11,776,000
Florida	19,371,000	105,338,000	63,815,000	75,447,000
Georgia	4,582,000	8,741,000	25,587,000	26,869,000
Kentucky	4,440,000	33,619,000	10,376,000	14,140,000
Louisiana	10,094,000	31,401,000	41,182,000	63,568,000
Maryland	10,926,000	25,964,000	37,508,000	45,007,000
Mississippi	4,147,000	37,364,000	16,262,000	17,202,000
Missouri	5,425,000	7,029,000	17,466,000	23,790,000
N. Carolina	9,430,000	19,757,000	31,392,000	29,585,000
Oklahoma	2,731,000	12,931,000	26,979,000	20,138,000
S. Carolina	4,104,000	16,198,000	15,917,000	14,549,000
Tennessee	84,104,000	13,189,000	107,506,000	19,641,000
Texas	56,829,000	79,906,000	190,447,000	136,697,000
Virginia	7,540,000	12,843,000	20,584,000	15,390,000
W. Virginia	1,180,000	675,000	3,965,000	25,149,000
TOTAL	$235,101,000	$426,330,000	$653,201,000	$651,859,000

FIRST quarter value of southern construction awards totaled $688,024,000, according to a compilation made from reports to the DAILY CONSTRUCTION BULLETIN of the MANUFACTURERS RECORD, with March contributing $235,101,000, or thirty-four per cent of the aggregate. The three-month figure is about five per cent ahead of the total for the comparable period of last year.

Private building, industrial construction and highway and bridge work are up in the first three months. Public building and engineering construction showed decreases. The $177,149,000 for private building is the largest among the five categories. The increase when compared with similar work last year is but one per cent.

Industrial construction shows about a

thirty-two per cent rise over the value of such work in the first three months of 1948. The current figure is $162,929,000 and its strength is due to the huge atomic energy construction program at Oak Ridge, where the Federal government is now initiating work on facilities to raise the output of U-235 in that Tennessee operation.

Highway Project Value Up

Value of highway and bridge projects below the Mason and Dixon line in the first quarter is $94,708,000, or about three per cent above the $91,960,000 recorded for such construction in the same period of last year. Texas, as in the past, leads the states of the South with a total of $28,098,000. Two other states—Maryland and Louisiana—have made awards totaling above the ten million dollar mark.

The $162,357,000 for public building represents a drop of about three per cent. Government buildings remained at practically the same level of last year with a total of $83,381,000, while school project values declined seven per cent to $78,976,000.

Southern construction value rose in March. The $235,101,000 is twenty-one per cent above the level for the preceding month but twenty per cent below the total for the comparable month of last year. Compared with the preceding month, private building in March is lower, industrial values up—due to the atomic energy plant; public building has dropped, heavy engineering construction is up and highway work is lower.

$235,101,000 March Total

The $235,101,000 total includes $91,490,000 for industrial projects; $44,626,000 for public building; $42,165,000 for private building; $35,038,000 for engineering construction and $21,782,000 for highways and bridges.

Residential construction, as in the past, figures prominently in the private building total which dropped thirty-nine per cent from February. The $30,153,000 for residential work comprises more than seventy-one per cent of the entire private building figure. The balance includes $5,617,000 for assembly buildings, $3,484,000 for commercial buildings and $2,911,000 for office buildings.

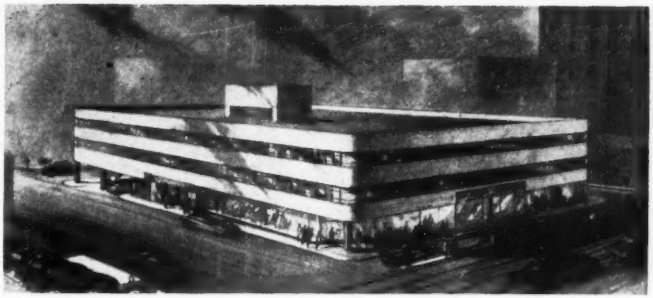
Total for heavy engineering construction in March is $35,038,000, or the equal of a fifty-four per cent rise over the total for the preceding month. Most of the increase occurred in the rural electric and sewer and water fields. The total for the former is $8,806,000 and for the latter, $15,244,000. Dams, drainage and earthwork approximated the level of February.

High Industrial Figure

The industrial construction figure is the highest in four months and represents more than four times the $21,968,000 for February and almost twice the $49,471,000 for January. Without the value of the big atomic production plant, however, it would have approximated the February figure.

Highway work remained relatively stable. The total is $21,782,000 for March,

(Continued on page 54)



Above—Construction is under way on the $1,650,000 Mercantile-Commerce building, Houston, Texas, to provide underground storage for 1,250 cars, ground floor shops and display rooms, second and third floors for air-conditioned offices. The building will be erected of reinforced concrete and faced with light brick embracing abundant glass space. Walter W. Ahlschlager is the architect; Vilbig Brothers, the general contractors. Milton F. Brown is president of the Mercantile National Bank.

SOUTH'S CONSTRUCTION BY TYPES

	March, 1949		Contracts Awarded First-Three Months 1949	Contracts Awarded First-Three Months 1948
	Contracts Awarded	Contracts to be Awarded		
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	$5,617,000	$16,000,000	$24,175,000	$19,423,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	3,484,000	7,901,000	24,097,000	23,660,000
Residential (Apartments, Hotels, Dwellings)	30,153,000	35,961,000	110,919,000	126,632,000
Office	2,911,000	8,309,000	17,958,000	6,606,000
	$42,165,000	$68,131,000	$177,149,000	$175,173,000
INDUSTRIAL	$91,490,000	$34,343,000	$162,929,000	$127,763,000
PUBLIC BUILDING				
City, County, State, Federal and Hospitals	$23,070,000	$38,485,000	$83,381,000	$69,496,000
Schools	21,556,000	91,523,000	78,976,000	85,106,000
	$44,626,000	$130,008,000	$162,357,000	$154,601,000
ENGINEERING				
Dams, Drainage, Earthwork, Airports	$10,983,000	$80,083,000	$37,287,000	$30,935,000
Federal, County, Municipal, Electric	8,806,000	17,331,000	18,069,000	9,896,000
Sewers and Waterworks	15,244,000	11,401,000	35,505,000	23,352,000
	$35,033,000	$117,815,000	$90,881,000	$63,173,000
ROADS, STREETS, BRIDGES	$21,782,000	$26,307,000	$94,708,000	$91,960,000
TOTAL	$235,101,000	$426,809,000	$688,024,000	$651,650,000

Below—Lockwood Greene Engineers, Inc., of New York and Spartanburg, designed this research laboratory being erected at Durham, N. C., for Liggett & Myers Tobacco Co. by J. A. Jones Construction Co., of Charlotte. The building is approximately 60 by 125 feet, two stories above the basement, and of reinforced concrete frame, red face brick walls and limestone trim to match a new six-story and basement Chesterfield cigarette factory across the street, also designed by the Lockwood Greene organization.

The 14-ton key to the city haul!

WHEN THIS SUBWAY excavation began, one problem was to find trucks that could truck the muck 24 hours a day and set a profitable pace over a route, 128 city blocks long!

These International six-wheelers could—and did! They took the muck, 8 yards at a crack, to a dump 8 miles away. Sure, they did it like they were made for the job. They *were!*

This operation required specialized equipment built for the job. The heavy-duty 6 x 4 International KB-11-F was selected. Reinforced side rails withstand unusual shock stresses of big loads dropping into the bed from elevated loading hoppers. The special power divider with integral auxiliary transmission provides a low creeper gear for pulling out of bad spots and an axle ratio coordinated with the main transmission to provide cruising speeds required to meet the schedule. Because of the heavy loads hauled through heavily congested areas, large-size heavy-duty air brakes were installed to insure safe operation.

That's what International means when it says it builds trucks *specialized* for the job. International offers 22 basic models, with gross weight ratings ranging from 4,400 to 90,000 pounds. And it forms 1,000 different truck combinations from 'em—one for every load, road, and haul.

And International's service facilities are just as complete as the line of trucks it offers. 4,700 International Dealers and 170 company-owned Branches are waiting to wait on you . . . any place . . . any time.

So whether you're working on a subway or a skyscraper, a sewer or a sausage factory, International offers a complete line of trucks specialized to the job. A call to your nearest International Dealer or Branch will put you on the right track to the right truck. Why not put in that call right away!

Other International Harvester Products . . . Industrial Power
Farmall Tractors and Machines . . . Refrigeration

Tune in James Melton and "Harvest of Stars"
NBC, Sunday afternoons

INTERNATIONAL TRUCKS

INTERNATIONAL HARVESTER COMPANY · CHICAGO

"It stands up under terrific abuse"

The BELL Prime Mover

. . . says Tom O'Rourke, Gen. Supt., Siegfried Construction Company

Hoist takes loaded Prime Mover to upper floor.

"On the new Veterans Hospital project in Buffalo, N. Y., a fleet of Prime Movers has seen extensive service under typical construction conditions: *mud, rough ground, heavy loads, long hours of steady use.*

"You should see the beating these machines take when it's muddy. Yesterday we were hauling bagged cement ...9 bags to a load. That's more than 3 times what a man can take in a wheelbarrow on dry ground. This was ankle-deep mud. Same thing with loads of mortar. We take big loads with no trouble at all.

"Another thing. When men are working with wheelbarrows, they get tired. Loads naturally get smaller and smaller. But, when they use our Prime Movers, they get a kick out of taking the *biggest* loads they can all day long.

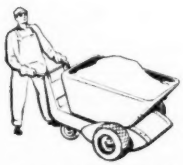
"We also use Prime Movers for cleaning up rubbish. We figure it saves us about $25.00 a day. And this is one of those hidden expense items we never figure high enough.

"One more thing. There are plenty of times when we have to go through doorways when pouring floors. A concrete buggy won't go through a standard door. Our Prime Movers will... and with a capacity load.

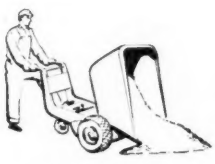
"We've got a swell piece of equipment in the Prime Mover. It stands up under terrific abuse."

Combining the features of a giant motorized wheelbarrow, half-ton platform truck, and light-duty grade-scraper, the Bell Prime Mover is tremendously useful in construction work. It will take abuse, too, as this testimonial will show you.

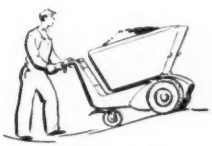
Completely gear-driven . . . with engine and clutch running in oil . . . with the entire engine fully enclosed against dirt and moisture, the Prime Mover requires minimum service. Its 3-hp. engine gives eight hours service on 3 gallons of gas.



Bucket holds 1000 pounds of wet or dry material



Mechanically dumped... operates by foot pedal



Climbs 20% grades fully loaded

If you would like to see these machines in operation on one of your jobs, we'll arrange it through a member of our nationwide sales and service organization. For information, please fill in the coupon and mail it today.

SEND COUPON NOW

Bell Aircraft Corporation
P. O. Box CN1, Buffalo 5, N. Y.

Please send me facts on the Bell Prime Mover. Who is the nearest distributor?

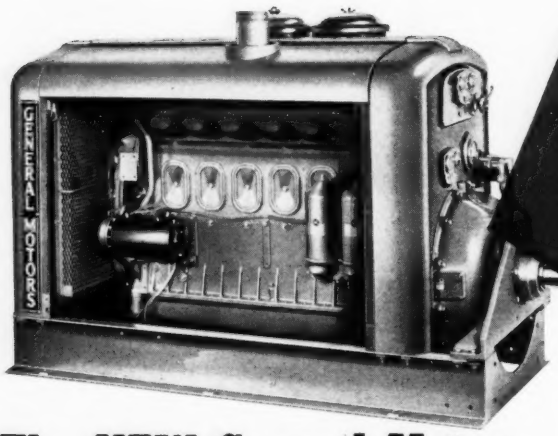
Name .....

Address .....

Company .....

City, Zone & State .....

A PRODUCT OF **BELL** *Aircraft* CORPORATION

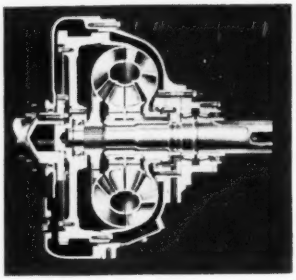


A Combination Torque Converter and Fluid Coupling *Integral with the Engine*

General Motors 71 Diesels equipped with the new GM Torque Converter take up no more space or weight than the same engines with conventional friction clutch and power take-off. Available in 3-, 4-, and 6-cylinder single engine units. Twin 4 and Twin 6 models having engine ratings from 75 to 300 H.P.

The NEW General Motors DIESEL ENGINE-TORQUE CONVERTER UNIT

HERE is a complete, integrated Diesel engine-torque converter unit that combines the inherent efficiency of the GM 2-cycle Diesel engine with the features and advantages of *both* torque converter and fluid coupling. It provides *torque multiplication up to 4 to 1* for starting variable heavy loads. It also provides *highly efficient transmission of power* during light load periods by *automatically shifting to fluid coupling* in the upper speed range.



In the new GM Torque Converter, oil does the work. Automatic transition from torque multiplication of 4:1 at stall to 1:1 in upper speed range.

A smooth, uninterrupted flow of power, delivered through a liquid, *prevents engine stalling* under any load and *protects both engine and driven machinery from sudden shocks.*

One Manufacturer—One Responsibility

Up to now most engines and hydraulic drives have been separate units. The result—compromise designs and divided responsibility. Now General Motors offers a new torque converter specifically designed and manufactured as an integral part of the General Motors Series 71 Diesel engine. It is a self-contained unit built by one manufacturer providing a long needed saving in space and weight as well as certain desirable operating characteristics not available before.

This new power unit will get the most work done in the least time because the engine operates in its most efficient speed range at all times—delivering maximum engine horsepower regardless of the speed of the load. *Maximum torque to start heavy loads PLUS maximum horsepower to keep the load moving.*

Everyone with a hard job to do in the oil fields, in construction, in mining or in logging should have all the facts about this compact, flexible GM Diesel Engine Torque Converter unit. *Write today for a complete description.*

DETROIT DIESEL ENGINE DIVISION

SINGLE ENGINES . . Up to 200 H.P. **DETROIT 28, MICHIGAN** MULTIPLE UNITS . . Up to 800 H.P.

GENERAL MOTORS

DIESEL BRAWN WITHOUT THE BULK

GM GENERAL MOTORS DIESEL POWER

Southern Construction Projects

ENGINEERING

Proposed Stage

FLORIDA

JACKSONVILLE — City contemplates additions at Imeson Airport; $500,000.

MacDILL FIELD, BR. TAMPA — C. C. Humphreyes, Airport Engineer, announced plans for a $70,000,000 reconstruction and improvement program for MacDill Field in the next 15 years.

KENTUCKY

CORBIN—City plans waterworks improvements this year to cost $976,999.

LOUISIANA

SHREVEPORT — City Council plans election April 14 on expenditure of airport fund of $2,400,000.

MARYLAND

BALTIMORE COUNTY—Baltimore County Metropolitan District, Court House, Towson, plans Patapsco Interceptor and Pumping Station; project is divided into six contracts: Contracts One & Two include the construction of 48-inch steel force main, $355,000; Contract No. 3 pertains to the construction of the sewage pumping station, $416,000; Contract No. 4 includes construction of 30, 33 and 36-inch gravity sewers using concrete tile-lined pipe, $253,000; Contract No. 5 includes the construction of 42-inch concrete tile-lined pipe at $321,000; Contract No. 6 includes construction of 48-inch concrete tile-lined pipe at $357,000.

MISSISSIPPI

LAUREL — City plans $250,000 bond issue for laying of 10 miles of six-inch water main and construction of an additional reservoir.

OKLAHOMA

BARTLESVILLE—City plans second phase of Municipal Airport program; $300,000.

TENNESSEE

NASHVILLE—U. S. District Engineer let contract to Schutt Construction Co., Genoa, Wisc., for Units 1, 2, 3, 6 and 7, Wolf Creek Reservoir; $4,094,000.

TEXAS

ELECTRA—City plans water supply dam on Camp Creek on W. T. Waggoner Ranch, $160,000; 10-inch pipelines and pump station, $170,000; filter plant, $70,000; total cost of project $400,000.

ELLINGTON FIELD—Col. B. T. Starkey, Comdr., announced plans for rehabilitation of all buildings to be used as headquarters for a Radar Navigation School; $1,000,000.

FORT WORTH — City plans second phase of airport improvement program; $2,315,000.

LA PORTE — Texas Air National Guard plans $500,000 structure.

VIRGINIA

HARRISONBURG — City Council plans $470,000 bond issue for third water line to the city from supply source 12 miles away.

ENGINEERING

Contract Stage

ARKANSAS

GREENE — Corps of Engineers, Memphis, Tenn., let contract to Pioneer Contracting Co. Inc., Dyersburg, Tenn., for levee work and ditch excavation; $264,851.

FLORIDA

JACKSONVILLE — Navy Department received low bid from Interboro Co., New York, at $188,220, for reactivation of fuel storage facilities, Naval Air Station.

MIAMI—Board of County Commissioners, Dade County, let contract to Joseph Reinertson, 2027 NW 7th Ave., Miami, for storm sewers pumping station and appurtenances; $208,776.

GEORGIA

AUGUSTA — City Council let contract to Batson-Cook Co., West Point, for additions to filter plant; $288,490.

KENTUCKY

GLASGOW—City sold $400,000 bond issue to Equitable Securities Corp., Nashville, Tenn., for sewers and sewage disposal plant.

RICHMOND—City let contracts for sewer extensions and improvements to Bush Building Co., 805-8th Ave., N, Nashville, Tenn., for pressure sewers with manholes and appurtenances; $286,516.

LOUISIANA

NATCHITOCHES — City let contract to Barnet Brezner, Box 654, Alexandria, for brick pumping plant and concrete reservoir; $190,655.

NEW ORLEANS — East Jefferson Waterworks District, Jefferson Highway and Arnoult Road, sold $1,175,000 bond issue to Scharff & Jones, Inc., John Nuveen & Co., C. F. Childs & Co., Weil and Arnold, Juran & Moody, Widmann & Co., Weil & Co., Inc., John Dane, all represented by J. E. Roddy of Scharff & Jones, Inc., for waterworks improvements.

MARYLAND

BALTIMORE—Board of Estimates received low bid from Frank Angelozzi Construction Co., 123 S. High St., for Jones Falls Sewage Pumping Station, $503,978; Contract No. 379.

NORTH CAROLINA

ALBEMARLE—City let contracts for water distribution system improvements; Section 111, installing water distribution mains, $201,912, H. W. Alward, Inc., Bernardsville; Section 1, valves, $38,490, Grinnell Co., Inc., Charlotte; pipe, $375,601, Glamorgan Pipe & Foundry Co., Lynchburg, Va.

SOUTH CAROLINA

GREENVILLE — City let contract to Leo Butler Co., Silver Spring, Md., for water works improvements; $250,059.

TENNESSEE

GETLINBURG—City let contract to Bush Building Co., 805-8th Ave., N., Nashville, for water system improvements; $480,000.

TEXAS

DALLAS—City received low bid from Russ Mitchell, Inc., 3202 Jefferson St., Houston, for Relief storm sewer; $343,929.

GALVESTON—City let contract to Tellepsen Construction Co., P. O. Box 2536, Houston, at $165,818, for airport administration building.

LUBBOCK — City let contract to Cullum and Hodgson, 1005½-13th St., Lubbock, for distribution mains; $284,682.

SAN ANGELO — Corps of Engineers, 606 Santa Fe Bldg., Galveston, received low bid from Winston Brothers Co. and Taylor-Wheless Co., Minneapolis, Minn., for construction on San Angelo Dam; $5,644,874.

SAN ANTONIO—City let contract to Walsh Construction Co., Electra, for relief sewer; $199,329.

TEXARKANA—City let contract to Shaw Construction Co., Texarkana, Ark., for sewage disposal plant and outfall lines; $419,010.

VIRGINIA

LANGLEY FIELD — National Advisory Committee for Aeronautics received low bid from Baldwin Southwark Co., Philadelphia, Pa., at $348,000, for designing, furnishing, fabricating and installing landing gear testing machine, Aircraft Loads Calibration Laboratory.

NORFOLK—City received low bid from A. Tauley Mundy & Co., Woodbridge, N. J., for concrete pipe transmission main, 48-inch, $2,158,765; 46-inch, $2,010,844; 42-inch, $1,900,636; first unit of water works program.

NORFOLK — Navy Department, Public Works Office, Norfolk, let contract to F. J. Gannaway, 7460 North Shore Road, Norfolk, at $158,550, for repairs to east bulkhead, Chambers Field.

HIGHWAYS, BRIDGES

ALABAMA

MOBILE — State of Alabama, Department of State Docks and Terminals, H. W. Sweet, Director, received low bid from Espy Paving & Construction Co., 108 E. Bay, Savannah, Ga., for concrete culverts for Department of State Docks and Terminals; $215,148.

KENTUCKY

FRANKFORT — Department of Highways let contracts for projects in following counties:

Boyle—Proj. No. S-104(1), RS 11-320, Junction City-Forkland Rd.; 3.841 mi. grade, drain, and local bank or creek gravel; Hart Construction Co., Lexington; $103,218.

Rowan—Proj. No. FI 3(8), SP-103-82, Morehead-Owingsville Rd.; 3.308 mi. bit. surf.; Kentucky Road Oiling Co., Frankfort; $165,731.

Mason—Proj. No. S-87(2), SP-81-215, Maysville-Brooksville Rd., 2.061 mi. grade, drain and traf.-bound limestone; George H. Cheek Construction Co., McClure Bldg., Frankfort; $132,717.

Breckinridge—Proj. No. S-89(2), SP-14-103, Union Star-Stephensport Rd.; steel superstructure and concrete flooring; Nashville Bridge Co., Shelby Ave., Nashville, Tenn.; $158,975.

Christian-Hopkins—Proj. No. S-372(4), SP (24-285) (54-260), Hopkinsville - Dawson Springs Rd.; bridge, grade, drain and traffic-bound limestone, 3.647 mi.; Harry O. Wyse, Lexington, Ky.; $294,475.

Metcalfe—Proj. No. S-250(5), SP-85-104,

(Continued on page 38)

Below—Bids opened by the Public Buildings Administration disclosed Beers Construction Co., of Atlanta, Ga., as low at $4,594,000 for erection of the new federal courts and office building at Nashville, Tenn. The building will have a concrete frame with flat floor slabs. Its exterior will be faced with polished granite at the first floor level, with limestone above. Eight stories high, the building will contain 197,000 square feet and will have space for 100 cars.

Pair of LINK-BELT SPEEDER Shovel-Cranes Speed Sewer Job

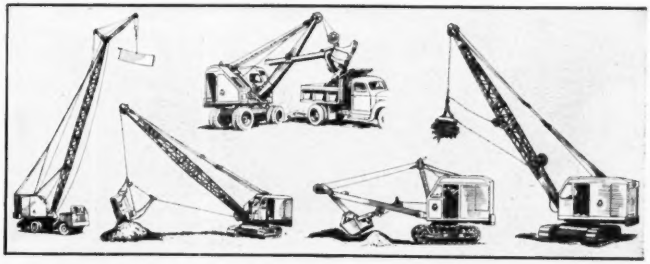
One LS-85 rigged as a back-hoe opens the 10 ft. trench, loading trucks with spoil. The other with hook block lowers the pipe, up to 90" in diameter, into the trench, and with clamshell, back fills. Team work of machines kept the street blocked only for short periods. Owner and operators all praise the fast powerful Link-Belt Speeders, and the helpful courteous service of Link-Belt Speeder distributors.

With crane-boom, the Link-Belt Speeder will handle numerous lifting, handling and erection jobs, or excavate with clamshell or dragline bucket. Quickly converted to shovel or trench hoe, it is ready for heavy digging of all kinds. The LS-85 has earned the nickname "Super ¾ yard" Shovel-Crane, by its extra strength, power and maneuverability.

•

In the Link-Belt Speeder line, there is a wheel-mounted, crawler-mounted or truck-type machine to suit every purpose, in capacities up to 3 yards, and convertible to all regular front end attachments. There is a Link-Belt Speeder distributor near you, with a stock of original Link-Belt Speeder parts and a crew of factory trained men. Call on him for information regarding this most complete line of Shovel-Cranes.

11,448



LINK-BELT SPEEDER

LINK-BELT SPEEDER CORPORATION,
CEDAR RAPIDS, IOWA

Builders of the Most Complete Line of
SHOVELS-CRANES-DRAGLINES

Construction
COVERING 16 SOUTHERN STATES

Pyrrhic Victory

President Truman has signed a rent control law, terming it a "crushing defeat for the real estate lobby." It must follow, therefore, that he considers it a victory for the forces of his administration.

The administration bill, as originally presented, called for a 27-month extension of controls. This was whittled down by nearly fifty per cent.

The original bill vested all authority for the removal of controls in the office of the housing expediter in Washington, an organization which has been notably loath to loose any of the reins it holds. The final law delegates this authority to governments at the municipal and county levels, subject to the state governor's approval. In other words it is now possible to obtain relief from controls without clearing through President Truman's administration.

Criminal prosecutions for violations were sought by the administration. The only feasible reason for this request seems to be that those in power wanted to wield so big a club that the little fellows would be afraid to raise their voices in protest. These provisions were flatly and categorically refused by the Congress.

As for the Real Estate Lobby, allegedly humbled by this legislation, it seems to be a generic term, like Wall Street, which includes anyone who thinks contrary to the President on matters pertaining to housing and construction. The extent of the defeat may be judged from the fact that for the first time a landlord or group of landlords may seek action, knowing that their request will be ruled on by members of their own community, whose primary interest is in the area in which they reside and work. This should be a most welcome change from dealing with bureaucrats who give away the right of control as cheerfully as they do their right arms.

After a few more crushing defeats like this one, the legislative representatives of the real estate organizations will have succeeded in bringing common sense into our housing picture.

HENDRIX DRAGLINE BUCKETS

COME BACK FOR MORE!

THEY'RE BUILT TO TAKE IT!

3 TYPES
FOR
EVERY DIGGING PURPOSE

⅜ to 40 Cu. Yds.

Built to slug it out on the toughest jobs, Hendrix Dragline Buckets are engineered to give dependable, economical performance that pays off in profitable operation. Hendrix Buckets are scientifically designed for maximum digging capacity . . . built for smooth, easy operation. And Hendrix Dragline Buckets can take the toughest punishment *and come back for more!*

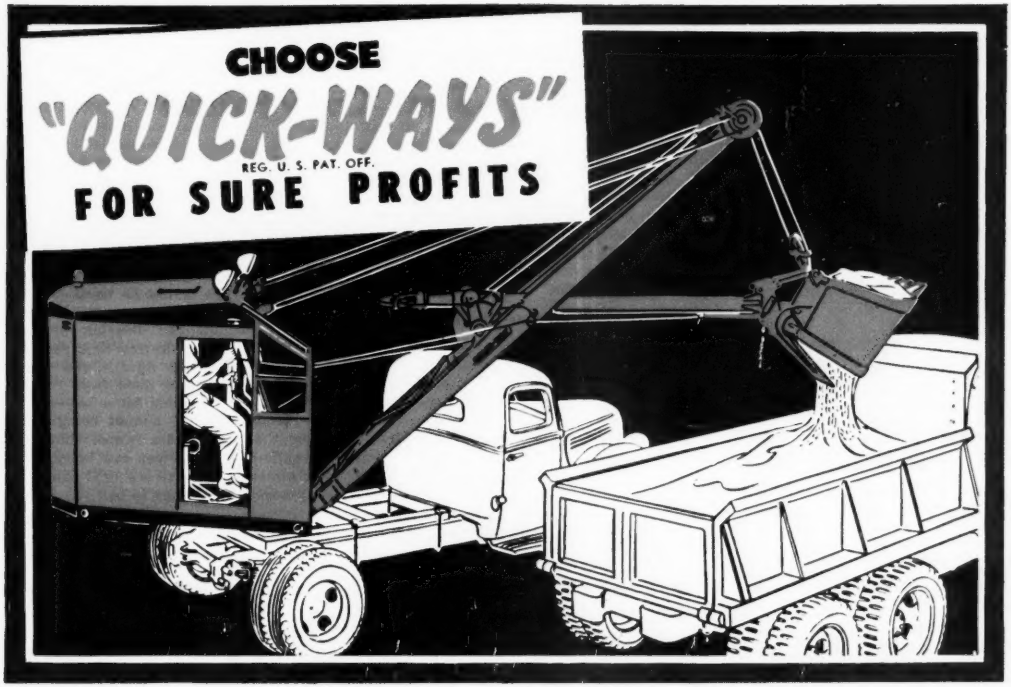
If you're up against a difficult digging job, you'll want to learn more about HENDRIX BUCKETS . . . built to take it and built to give you low-cost, maintenance-free performance that means profitable operation.

HENDRIX *Lightweight* **DRAGLINE BUCKETS**

For descriptive literature, ask your dealer or write to

HENDRIX MANUFACTURING CO., INC.

MANSFIELD — LOUISIANA



PORTABILITY AND CAPACITY . . . these are the fundamentals you KNOW you want in a truck shovel. You get **PORTABILITY** in a *"QUICK-WAY"* because it is built of steel for lightness and strength, no heavy counter-weights to slow you down. You get **CAPACITY** because balance and stability are designed into your *"QUICK-WAY"*.

In addition you get **SPEED . . . PERFORMANCE . . . VERSATILITY . . . INTERCHANGEABILITY . . . SIMPLICITY . . . ECONOMY OF OPERATION . . . LOW FIRST COST . . . LOW MAINTENANCE . . .** and **EXTRA PROFITS.**

A *"QUICK-WAY"* mounts on **ANY** standard truck of proper size to go anywhere a truck can go at truck speed. A *"QUICK-WAY"* is **CONVERTIBLE IN MINUTES** from Shovel to **CRANE, DRAGLINE, CLAM-SHELL, PILE DRIVER, SCOOP, TRENCH-HOE** or **BACK FILLER.** You buy only the attachments you want. A *"QUICK-WAY"* is simply built, with many interchangeable parts, all easy to service . . . and durable.

THE FUNDAMENTALS built into every *"QUICK-WAY"* add up to sure profits on a small investment, with one of the most useful machines you can own.

NO MATTER WHAT OTHER EQUIPMENT YOU OWN, you need *"QUICK-WAYS"* too. There's a *"QUICK-WAY"* owner near you; ask HIM.

"QUICK-WAY" TRUCK SHOVEL CO., Denver

Service available from Distributors strategically located in U. S. and worldwide.

"QUICK-WAY" TRUCK SHOVEL DISTRIBUTORS:

FLORIDA-GEORGIA TRACTOR CO.
Jacksonville, Tallahassee, Orlando, Lakeland, Tampa and Miami, Florida; Savannah and Waycross, Georgia

HAMPTON RDS. TRACTOR & EQUIP. CO.
Norfolk

INDUSTRIAL TRACTOR & EQUIP. CO.
Nashville

NORTH CAROLINA EQUIPMENT CO.
Raleigh, Charlotte, Asheville, Wilmington, Guilford

FREE STATE EQUIPMENT CO.
Baltimore, Md.

POWER EQUIPMENT COMPANY
Knoxville, Chattanooga

RAY BROOKS MACHINERY CO.
Montgomery, Mobile

RISH EQUIPMENT CO.
Charleston, Cincinnati, Clarksburg, Richmond, Roanoke

SOUTHERN EQUIPMENT SALES CO.
Columbia

TRI-STATE, INC.
Atlanta, Macon

TRI-STATE TRACTOR CO.
Albany, Ga.

American Institute of Architects Meets at Houston for Eighty-First Convention

HOUSTON for four days last month was the meeting place for more than a thousand members of the American Institute of Architects, who part of the time discussed their eighty-first convention theme of "American Architecture in the Atomic Age," the rest of the time devoted themselves to a previous theme of "Fundamentals of Design," particularly with color as a factor, and also made awards for outstanding achievements and elected new officers.

Ralph T. Walker, of the New York firm of Voorhees, Walker, Foley and Smith, is the new president, succeeding Douglas W. Orr, New Haven, Conn., architect who retired after two terms as head of the Number One architectural society of the world. Elected with Mr. Walker were Glenn Stanton of Portland, Ore., first vice president; Kenneth E. Wischmeyer of St. Louis, Mo., second vice president; Clair W. Ditchy of Detroit, secretary; Charles F. Cellarius of Cincinnati, treasurer.

New Directors Selected

Two new directors were selected. They are Arthur C. Holden, representing the New York district and Wilbur H. Tusler, the North Central States district. Incumbent directors are Ross Shumaker, South Atlantic district; Thomas D. Broad, Gulf States district; Allan H. Neal, Middle Atlantic district; Kenneth C. Black, Great Lakes district; George Cannon Young, Western Mountain district; James H. Mitchell, Sierra-Nevada district and Lorentz Schmidt, Central States district.

Twenty-eight architects were made fellows of the Institute. From fourteen states—six of them southern—those so honored were: Earl T. Heitschmidt, Los Angeles; Burnham Hoyt, Denver; John L. Skinner, Miami; George H. Bond, Harold Bush-Brown and Henry J. Toombs, Atlanta; Jerrold Loebl and Nathaniel A. Owings, Chicago; Frederic L. Morgan, Louisville; Arthur Feitel, New Orleans; Harry L. Meed, Grand Rapids; Angus V. McIver, Great Falls.

Also, James W. Kideney, Buffalo; Matthew W. Del Gaudio, Wallace K. Harrison, Daniel P. Higgins, John C. B. Moore, Louis Skidmore, and Harold R. Sleeper, New York; Walter W. Hook, Charlotte; Harry Hake, Cincinnati; Joseph Lewis Weinberg, Cleveland; Glenn Stanton, Portland, Ore.; Birdsall P. Briscoe, Alfred C. Finn, Kenneth Franzheim, Milton McGinty and William W. Watkin, all of Houston, Texas.

Wright Receives Medal

Described as a "titanic force," Frank Lloyd Wright received the Gold Medal his courage, high-hearted hope and contributions to the advancement of architectural thought. Louis C. Rosenberg, Fairfield, Conn., was awarded the Fine Arts Medal, Frederick L. Langhorst, San Francisco, and Marsh, Smith and Powell, Los Angeles, won top ratings for distinguished design. Among others receiving Awards of Merit for residential design were Robert M. Little of Miami Beach, Fla., and for school design, Donald Barthelme of Houston and George L. Dahl of Dallas.

Admiral Parsons Opens Seminar

Opening address of the Atomic Age Seminar was by Rear Admiral William S. Parsons, naval expert on atomic defense, who said the general conclusions from the Bikini tests can be applied to national and city planning and structural design, but that the sound approach to community and structural design is to emphasize primary function and to add atomic blast and radiation flash to the list of natural and man-made catastrophes which may be encountered.

"An attempt to provide complete, necessarily underground, protection against atomic attack at close range would cost so much," he stated, "it would interfere so greatly with what we have come to regard as normal living that it is unacceptable. The only alternative is to accept a 'calculated risk,' the military euphemism for taking a chance. There is nothing unusual about such a compromise with fate. We make these decisions each time we ride in a taxicab or go skating or skiing. The practical question faced by a city planner or building designer is 'what can be done with what is available?' Absolute safety has never existed this side of the grave."

Architecture in the Atomic Age is Theme of Conclave—Awards Made for Last Year's Achievements—New Officers Selected—Color Emphasized in Architecture

Sumner T. Pike, a member of the United States Atomic Energy Commission, titled his address "Design for Peace." The two recent wars have proved, he declared, "this highly industrialized, high energy consuming, fast moving civilization can convert itself into a machine of destruction beyond our comprehension" and "the modern complex interdependent society is itself most vulnerable to the fury of modern war." His subject, he asserted, is a belligerent one, by which he meant "we must go on, stay on and step up the offensive. In a 'cold war,' as in any other form of conflict, this is the best defense.

"What are we trying to do in this cold war? We're not trying to belittle, outflank, undermine, embarrass, weaken, or otherwise injure the Russian people. We're not trying to destroy their system of government if they want it, and we're not trying to prevent them from realizing a rightful ambition for a better life for the millions of human beings for whom the iron curtain cannot shut out the suffering which war can bring. We are, however, going to see to it that nobody does these things to us.

Pike Advocates Dispersal

"We should have a strategically more desirable dispersal of our centers of production, but the economic factors which influence such a distribution are far more compelling than the possible avoidance of an atom bomb. This means that when we have good economic and social reason to move industries, we move them, taking all the profit which accrues in reducing strategic vulnerability.

"It means, too, if you are designing a building, you don't double the cost by designing it to withstand an atom bomb. It would be most difficult to design a building to withstand an atomic bomb burst within a half-mile, so your first compromise is with the specific hazard. If you designed all new buildings to withstand such a burst up to a full mile, the burden placed on the users of those buildings would do more to reduce the war potential of the nation than the protection would be worth."

Efficient Industry Needed

He suggested the architects stop worrying about building atomic bomb-proof buildings, or about putting factories underground, except those few installations which the national defense may mark as priority targets. "Keep in mind," Mr. Pike exhorted, "that our strongest defense or the best offense in either a cold war or a hot war is the healthiest and best educated population and the most efficient industrial machine. You may increase the reinforcement in industrial structures and bridges, thickening the concrete and putting in cross-bracing in these and ordinary commercial buildings.

"You will want to use non-inflammable materials in all structures, especially dwellings, but it will be the rarest case in which you will greatly change a building design solely for reasons of defense against atomic bombs, if the change interferes with the primary function of the building, or if the change results in a burden on the user which lowers his

ability to do a job that is important to the country."

Philip M. Hauser, associate dean of social sciences at the University of Chicago, talked on the importance of population trends in the atomic age. "The nations which were the first to become industrialized and to contribute to the building up of what we know as western civilization are the nations which experienced the most rapid population growth since the seventeenth century—a growth which has now almost spent itself.

West Nation Growth Slow

"It is significant that all of the nations which are likely to be signatories to the Atlantic Pact are in this category," he observed, with other areas of the world destined to continue experiencing rapid population growth or potentially possess the capacity for such growth. "Most of the nations of southeastern Europe, including the U.S.S.R., will continue to grow, while the western countries, including the United States, have stationary or declining populations," he declared.

Between 1940 and 1970, while the population of the United States is increasing from 132,000,000 to 160,000,000, the population of the U.S.S.R. is likely to rise from 174,000,000 to 250,000,000. "Military potential is by no means entirely a function of manpower," said Professor Hauser, "but among nations of equal industrial development and efficiency, manpower may well be a decisive factor. In a troubled and tense world, the security and future of individual nations may in a large measure depend on their national strength."

Federal Decentralization Urged

Maj. Gen. Philip B. Fleming, Federal Works Administrator, favors the "decentralization of Federal buildings and government functions" of the last few years. He discussed urban growth and redevelopment, expressways, and the use of advanced designs and new materials in new Federal buildings, and cited the new general accounting office, for which bids were recently received, as an example of what Federal architects are doing in the way of economy and efficiency.

Importance of color in architectural design was emphasized by the number of papers presented on the subject. These included:

Color Phenomena — Isay A. Balinkin, consulting physicist to Cambridge Tile Manufacturing Co. of Cincinnati;

Seeing Light and Color — Ralph M. Evans, superintendent of color quality control process, Eastman Kodak Co., Rochester, N. Y.;

Color Order Systems — Carl E. Foss, color consultant of Princeton, N. J.;

Functional Color and the Architect — Faber Birren, an authority on the functional and psychological aspects of color.

Color in Architectural Practice — Julian E. Garnsey, colorist of Princeton, N. J.

H. W. Waldron Faulkner, of Washington, summarized the discussions of the color specialists. "The field of color has become a science in itself," he declared. "It reaches into physics, chemistry, physiology, psychology and finally into aesthetics. The last of these is probably of most direct interest to architects." His conclusion was, "we must remember that the color systems are guides only. They are tools, not rules. The theories on which they are based are not substitutes for the intuition of the creative artist."

Approve Cost Program

In a pre-convention session, the Board of Directors of the Institute approved a six-point program on building costs. The proposals advanced were:

1. That the A.I.A. continue and enlarge its research activities under its Department of Education and Research in order to raise technical standards and reduce costs, regardless of economic cycles, measuring performance by man-hours rather than dollar costs.

2. That the entire weight of the architectural profession and of the industry should be placed against collusive and restrictive practices, whether by industry, labor or in codes.

3. That the American Institute of Architects start at a national level conference with representatives of building trades labor to discuss productivity, jurisdictional problems (with specific examples), and apprentice training.

4. That the A.I.A. continue to promote adoption and extension of Modular Coordination—a system of building based on standardizing sizes of building materials at multiples of 4 inches—by the profession and industry.

5. That there be initiated through joint committees of the American Institute of Architects, the Producers' Council, the Associated General Contractors and the U. S. Chamber of Commerce a study of legislation and of distribution systems affecting the pricing of materials and equipment in the building industry.

6. That architects take steps through nationwide organization of the building industry for consideration of industry-wide problems for which there is precedent in state and local groups.

Cost Situation Appraised

In predicting the future of building costs, the A.I.A. special committee on the subject said:

"There is no likelihood that costs will be materially lowered unless one or two things happen:

"Demand declines, leaving the industry in a more vigorous competitive position so that the necessity as well as the possibility for more complete use of more efficient techniques will appear, or

"Demand continues at approximately present levels long enough for industry to build up capacity (principally in labor force and power tools) to make more efficient operation possible.

"Occasional downward fluctuations in building volume may have a healthy influence on the building industry, but in view of the larger total demand, will not cause substantial reduction in building costs."

New A. I. A. Leader

Above—Ralph Walker, newly elected president of American Institute of Architects, succeeded Douglas W. Orr, who retired after serving two terms. Mr. Walker is a member of the New York firm of Voorhees, Walker, Foley and Smith. Other officers elected were Glenn Stanton of Portland, Ore., first vice-president; Kenneth E. Wischmeyer of St. Louis, Mo., second vice-president; Clar W. Ditchy of Detroit, Mich., secretary; Charles F. Cellarius of Cincinnati, treasurer.

Registration Council Elects Officers for 1949

Two national organizations concerned with the registration of architects have elected officers for the coming year, it was announced at the 81st convention of The American Institute of Architects.

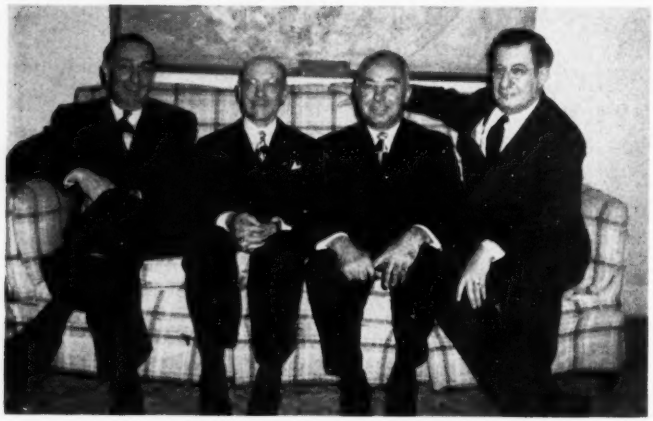
They are the National Council of Architectural Registration Boards and the Association of Architectural Examiners.

Clinton H. Cowgill, of Blacksburg, Va. was elected president of the National Council of Architectural Registration Boards at its twenty-ninth annual meeting. Other officers elected were: Roger C. Mirchhoff, of Madison, Wisc., first vice-president; Charles E. Firestone, of Canton Ohio, second vice-president; Fred L. Markham, of Provo, Utah, third vice-president; William L. Perkins, of Charlton, Iowa secretary-treasurer. Warren D. Miller, of Terre Haute, Ind., is the retiring president of the organization.

The Association of Architectural Examiners elected Walter J. Dixon, of Mitchell, S. D., as president and Ralph C. Kempton, of Columbus, Ohio, secretary-treasurer. Gilbert C. Higby, of Newark, New Jersey, was elected an Honorary Life Member of the organization.

A. G. C. Convention Discusses Many Subjects

Elects Officers, Hears Addresses by Experts



Above—Adolph Teichert, Jr., of Sacramento, Calif., second from left, relaxes after his installation as new national president of Associated General Contractors of America. At his left is Walter L. Couse of Detroit, vice-president, and at his right, Dwight W. Winkelman, retiring president of Syracuse, N. Y., and H. E. Foreman, A. G. C. managing director.

BUSY sessions of the thirtieth annual convention held early last month at New York by the Associated General Contractors of America covered many technical and economic phases of the construction industry, as well as subjects such as "valley authorities," a long-range public works planning program, the proposed labor legislation, day labor, the "basing point decision." The contractors at the same time chose the officers who will lead their organization through the current year.

Teichert Elected President

New president is Adolph Teichert, head of A. Teichert & Son, Inc., of Sacramento, Calif., who last year served as A.G.C. vice president and this year assumed the presidency vacated by retiring president Dwight W. Winkelman, Syracuse, N. Y., contractor. Walter L. Couse, of the Detroit firm bearing his name, is the new vice president. William Muirhead, of Durham, N. C., was renamed treasurer, and H. E. Foreman, managing director.

Seven new directors were elected and ten others were reelected to directorships. These included: J. G. Bartholomew and Hal C. Dyer of Dallas Tex.; W. D. Amis of Oklahoma City; Charles A. Long of Birmingham, Ala.; F. L. Shackelford of Greenville, S. C.; J. W. Brennan, Pocatello, Idaho; C. W. Cunningham, Omaha, Nebr.; C. D. Bartholow, Huron, S. Dak.

Also, W. H. Eriesson, Chicago; F. I. Rowe, Columbus, Ohio; M. C. Harrison, Pittsburgh, Pa.; A. D. Blakeslee, New Haven, Conn.; C. L. Harney, San Francisco; E. O. Earl, Tucson, Ariz.; C. E. Nelson, Logan, Utah; G. C. Koss, Des Moines, Iowa; R. P. Bayard, New York, and S. L. Fuller of Pittsburgh, Pa.

The convention, which was attended by approximately 1,500, condemned proposals to establish new government agencies patterned after the Tennessee Valley Authority "because they establish forms of government contrary to the principles of free competitive enterprise." Coordinated development of resources in river basins and elsewhere was recommended under supervision of existing arms of the government.

Members of the A.G.C. feel that orderly and economical construction of public works can be accomplished best by long-range, planned programs and accordingly recommended congressional appropriation of money for loan to state and local governments to defray the costs of preparing plans and specifications for construction of essential public works projects in the future by the contract method.

Urge Clear Labor Bill

The contractors see themselves as the victims of conflicting state and federal laws if the currently proposed labor bill is passed with the proviso that "nothing in this act . . . or in any state law, shall preclude an employer engaged in commerce, or whose activities affect commerce, from making an agreement with a labor organization . . . to require as a condition of employment membership therein."

They emphasized the inability of the courts thus far to clearly and definitely define the meaning of "engaged in commerce" or whose "activities affect commerce" as applied to the various operations of the construction industry. The resolution approved by the meeting asked Congress either to clarify the two clauses, to exempt the construction industry from the proviso or to eliminate the reference altogether.

Day labor also came in for its share of the discussions. Pointing out that experience has shown that government work can be done more economically by the contract system, the meeting recommended that current limitations on day labor operations by the Bureau of Reclamation be continued and that Congress write into the reclamation law the requirement that all construction should be done by contract, except for management and operation, maintenance and repair, engineering and supervision and routine minor or emergency construction.

Law Change Asked

Another resolution was passed with the view to lifting the veil of uncertainty and confusion prevailing as the result of the Supreme Court's decision in the cement case. Action by Congress to amend or clarify existing laws would help to restore maximum competition and perhaps lower construction costs by enabling sellers of construction materials to establish price systems which would permit them to compete in any area where they would desire to enter.

Dwight W. Winkelman, the retiring president, delivered the keynote address at the opening general session and shared the platform with H. E. Foreman, the managing-director, who made his annual report. Mr. Winkelman warned the assemblage that it is "necessary to defend more vigorously than ever before a way of life here which has made this a great nation and the envy of the world."

War Possibility Cited

He recalled that the construction industry completed work valued at more than $49,000,000,000 and said now that we must think of the possibilities of another war, the government once again has called upon the association to help plan how this industry could be most effectively mobilized. In these times of violent changes, Mr. Winkelman emphasized the need for stability in the construction industry with the statement:

"Stability is important to us as contractors because in most of our operations we establish the price at which we will build the project and then go to work in the hopes that we have not estimated too low. Certainly all of us realize that changes are inevitable. Many changes are improvements, but violent and rapid changes only create more problems and more uncertainties than they solve.

"I feel that I can speak for all members of the association in stating that we do not seek to oppose changes, nor do we seek to be reactionary and opposed to im-

Lauver Photos

Adolph Teichert, Jr., head of A. Teichert & Son, Inc., Sacramento, Calif., makes his inaugural address as new president of A. G. C. Dwight W. Winkelman, the retiring A. G. C. president, is shown presiding at the closing session, just prior to Mr. Teichert's induction to the presidency.

Right—Top—The Heavy-Railroad Division elected A. S. Horner of Denver, Colo., chairman. Mr. Horner is shown with John MacLeod of Clearwater, Calif., vice chairman, at his left ,and S. L. Fuller, retiring chairman, right.

Right—Second—C. P. Street of Charlotte, N. C., was elected chairman of the Building Division, and D. A. Harmon, right, vice-president.

Right — Third — Carl E. Nelson of Logan, Utah, was elected chairman of the Highway Division. At Mr. Nelson's left is A. N. Carter, Highway Division manager; and at his right, George C. Koss, the retiring chairman.

Right — Bottom — William Muirhead, president of William Muirhead Construction Co., Durham, N. C., was reappointed treasurer. A past A. G. C. president, Mr. Muirhead is pictured delivering his report.

provements. Rather, my experience has been that contractors are the first to make changes when they find that a change will make an improvement, or will develop more efficient methods for accomplishing an objective."

Record Construction Forecast

Managing Director Foreman told his listeners that the construction industry is in a position to do a larger volume of work faster and more efficiently than in any prior post-war year. He reported the possibility of a record volume of $18,750,000,000 worth of new construction this year, as well as maintenance and repair operations approximating $6,000,000,000. His predictions were based on more adequate supplies of materials and equipment, more available skilled workmen and no major disturbances such as war or depression.

Guy C. Kiddoo, vice president of the First National Bank of Chicago, delivered one of the most talked of addresses at the convention. His subject was "The Banker and the Contractor." The contractor, he said, should remember there is no substitute for experience and that contracting cannot be learned from a book. The kind of work and the size of jobs should be reasonably related to financial resources.

He termed contracting very largely a depression-proof business. Standardized methods of figuring costs and preparing bids, familiarity of costs for various operations involved on a job, adequate provision for equipment rental or write-off and the future trend of material prices and labor costs were cited as important factors influencing current bidding.

Bid Basis Discussed

Competition, Mr. Kiddoo stated, should not influence the contractors' bid. "You have some reasonable basis for estimating the cost of labor and material, but when you base your bid on what you think someone else may bid, you are venturing on uncertain ground. Perhaps you may be justified occasionally in raising your bid if you think competition will be weak, but you should not lower your bid below a figure that provides a reasonable profit margin simply because you think somebody else may take the work more cheaply."

The Chicago banker, who described his institution as probably doing more business with contractors than any other in the country, observed that the construction industry receives very moderate compensation for its work when you take into account the capital and experience required and the risks incident to the business, which are of greater variety and complexity than in most other fields of endeavor.

Reveals Profit Percentages

During his address, he disclosed that one group of thirteen building and general contractors who in the last fiscal year did $42,299,000 worth of work, showed a profit of but 3.36 per cent before federal income taxes, which further reduced the percentage to 2.22. Six representative road contractors with $7,718,000 worth of completed work showed a 6.57 per cent profit before taxes, and 3.99 per cent after taxes.

Fourteen firms in the mechanical or specialized fields finished work amount-

(Continued on next page)

A. G. C. Convention—Continued

(Continued from preceding page)

ing to $21,225,000 and had profits of 7.13 per cent before taxes which reduced that percentage to 3.83. Twelve corporations in the heavy engineering construction field, whose figures extend over a longer period because of the character of the projects, completed $26,797,000 in work and showed profits of 6.77 per cent before and 4.55 per cent after taxes.

Grave Problems Ahead

Looking into the future, Mr. Kiddoo cautioned that there are grave problems ahead with no solutions in sight. "The cost of construction is a serious matter to our national welfare. There is a tremendous need for housing but costs have currently put new homes beyond the reach of many who need them most. You should not simply accept high costs as inevitable and pass them on to owners and public authorities. You should be ever alert to devise and adopt means of reducing costs, because as you do so you broaden the market for your services."

Carroll M. Shanks, president of Prudential Life Insurance Co., told the gathered contractors how the private investor views the construction industry. "Profit dollars are up in the twenty years since 1929," he said, "but tax dollars have increased many fold and the dividend dollars to stockholders have increased only slightly. Plow-back of earnings has been perhaps the greatest factor in providing plant and equipment."

He listed some of the reasons why he believes business faces a sorry aspect, including a reference to the stock market today as "a great stop signal for the sale of equities" and warned that "we face increased taxing away of business dollars that can and should go into plant and equipment," with the proposed welfare program as "one of the overall gigantic projects which will absorb these tax dollars."

Threat of High Taxes

"Our job," he concluded, "is to do everything possible to see that the money needed to replace, renovate and modernize our national plant and equipment is not taxed away. In spite of the urgings of our desire to further the seeming immediate interests of all of our people, we must see to it that taxes to enlarge welfare programs are kept within the confines of increased hourly productivity of workers supplied with the most modern tools. An increase of taxes faster than this will eventually rob us of our tools and means destruction of the possibility of advance as an industrial nation."

How good earnings will be in 1949, he observed, is anybody's guess. The 1948 earnings are not so resplendent when analyzed. Purchasing power of the dollar was down, which meant that the number of dollars required to replace plant and equipment and for working capital and practically every other purpose is way up. He scored the continuing propaganda to convince the people of this country that profits somehow are evil and inimical to the workingman, with the statement, "the worst crime against working people is the corporation which fails to operate at a profit."

Prof. Sumner H. Slichter, of Harvard University, discussed the economic outlook and its relation to construction. Most important factor in the present business situation, in his opinion, "is the growing reluctance of consumers and business concerns to spend money. Willingness to spend money has been dropping for several years, if one measures it by the ratio of recent income to present expenditures.

Slow Spending Crucial

"The crucial question confronting business in 1949 is whether the growing reluctance of enterprises and individuals to spend can be halted before it produces a drop in total spending and a recession. People are still willing to spend a little more than their recent incomes with the result that total incomes have been rising. By the end of 1948 the rate of increase in personal incomes had become very slow."

He charged private enterprise with the responsibility for maintaining the volume of employment and emphasized that it is important for the government not to aggravate the problem. He said President Truman does not understand the problem and has received bad advice from his Council of Economic Advisers. He listed the task of business in maintaining production and employment is made easier by:

Incomes outrunning prices; large consumer holdings of cash; low level of consumer short-term indebtedness in relation to personal incomes after taxes; lack of accumulation of inventories relative to sales; low rate of private investment during 1948 in relation to the gross national product; large backlog of consumer demand, and also the "very large" backlog of business demand.

To the question as to what business can do to prevent the increasing reluctance to spend money from dropping so far that it produces a decrease in incomes, expenditures, production and employment, Professor Slichter answered, "There are two principal steps which business can take. One is to adjust its investment policies to present conditions and the other is to adjust its selling policies, particularly its price policies, to present conditions."

The construction industry, he stated,

(Continued on page 58)

Top picture—The Carolinas Branch is one of the most active A. G. C. units. E. D. Sloan, its president, is shown receiving the Cashman membership trophy from Fred I. Rowe, chairman of the membership committee. Robert Patton, executive secretary, looks on. In the lower picture are N. K. Dickerson, Jr., vice-president of the Carolinas Branch and President Sloan.

Above—Watauga dam, on the Watauga River, nears completion. It is 900 feet long, 318 feet high and is already being used for water control purposes.

Watauga Dam Starts to Work

TVA's unified water control system acquired a new working member last December when the steel closure gate in the diversion tunnel at the Watauga Project was dropped and filling of the 16-mile reservoir began. Final details of construction remain to be completed, and the two 25,000-kilowatt capacity generating units are scheduled for installation and operation during the summer and fall of 1949. The system now embraces 27 major dams.

This dam, designed to control the run-off from a drainage area of about 468 square miles in upper East Tennessee and Western North Carolina, is located on the Watauga River near Elizabethton, Tennessee. The site is in Carter County, approximately 35 miles above the mouth of the Watauga, a tributary of the same Holston River which helps form the Tennessee.

Earth and Rock Fill

Watauga Dam is an earth and rock fill structure with a maximum height of approximately 318 feet and a length along the crest of approximately 900 feet. Maximum width at the base is about 1,260 feet. The dam has been placed in a deep gorge where the Watauga flows through the Iron Mountains, a point where the stream bed is only about 150 feet wide.

Construction of the Watauga Dam was started during the war—February 16, 1942—under an authorization by Congress approved by the President on December 17, 1941. Activities were halted, however, by order of the War Production Board, on December 20, 1942. Funds for resumption of construction were appropriated by Congress for the fiscal year commencing July 1, 1946, and TVA construction crews moved in on July 22.

Building of the dam included the placing of 1,500,000 cubic yards of compacted clay in the core, and 2,000,000 cubic yards of rock in the fills on both sides of the core. Placing of the material in the dam was started on June 13, 1947, on which date the river was diverted from its old channel to the diversion tunnel. The diversion was accomplished about six weeks ahead of schedule.

Power Installations

Power installations at the dam will consist of two generating units of 25,000 kw. generating capacity each. Watauga Dam will add approximately 59,000 kw. of continuous power to the TVA system, of which 21,500 kw. will be developed at the dam and the remaining 37,500 kw. at down-stream dams from the release of stored water. After leaving Watauga, the water will be used through about 600 feet of head developed at 10 dams.

Low level discharge from the reservoir is provided by a 34-foot diameter concrete-lined tunnel discharging into the spillway tunnel. The sluices are controlled by two 96-inch Howell-Bunger valves and two hydraulically operated emergency gates, each five-feet eight-inches by ten feet. Capacity of the sluices varies from 11,900 cubic feet a second with the reservoir at spillway level, and 11,500 cubic feet a second with the lake at elevation 1,959, the normal pool level for multiple-purpose operation.

Morning Glory Spillway

The spillway of the dam is of the "morning glory" type with a diameter of 128 feet at the crest level. Crest of the spillway is 1,975 feet above sea level. Six piers, three feet wide, guide the water from the spillway into a concrete-lined shaft and tunnel with a length of 1,785 feet. The spillway has a discharge capacity of 33,000 cubic feet a second at the maximum water level of 1,981.5 above sea level.

This dam provides a total storage capacity of 677,000 acre-feet, of which 627,000 acre-feet is useful storage for flood control and power operations. In flood control, the reservoir provides protection for communities centering around Elizabethton and Kingsport, Tennessee, and also assists in controlling the flood flows of the Tennessee River at Chattanooga, Tennessee and downstream.

The reservoir has a main shoreline, at normal operating level, of 104 miles, and its volume is sufficient to absorb a flood equal to the disastrous flood of 1940 without overflow through the spillway tunnel. The flood for which the reservoir and spillway were designed is nearly twice as large as the 1940 flood. A flood of such proportions is considered possible although never experienced.

Construction Equipment Used

Principal construction equipment used at Watauga Dam included:

Locomotives — three tunnel type 15-ton diesels;

Tractors—seven 80 h. p. diesel crawler type and fourteen 130 h. p. crawler type;

(Continued on page 56)

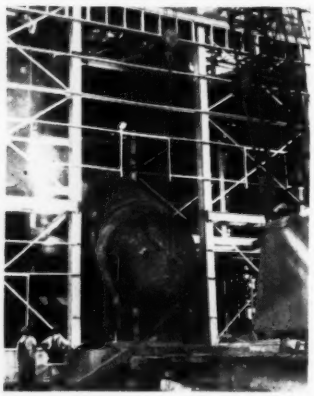
Above—Left—Main structure of the $32,000,000 newsprint mill being erected at Childersburg, 40 miles southeast of Birmingham, Ala. Stretching for 1,100 feet, the building includes the machine room (foreground), a pulp drying room and roll storage, for which steel is yet to be erected in the picture, wash room, bleach plant, screen room, shops, grinder room and stock preparation area. Right—Some of the 60 or more tanks required for the plant.

Daniel-McGraw -- Co-Contractors for Erecting $32,000,000 Coosa River Newsprint Plant

IT'S a joint construction venture—that tremendous task of erecting the buildings and installing the equipment for the $32,000,000 paper and pulp mill now approaching forty per cent of completion in the Alabama pinelands forty miles southeast of Birmingham — and the co-contractors are F. H. McGraw & Co., of Hartford, Conn., New York and Chicago, and Daniel Construction Co., of Greenville, S. C., and Birmingham, Ala.

To tell how these two builders—the one from the North and the other from the South—came to temporarily pool their skill and resources requires a look into the past and a recital of events leading up to the second time within a decade that a plant has been constructed below the Mason and Dixon line to use southern pine logs as the basis for newsprint manufacture.

Below—One of the two big digesters being swung into place.



Locale of the story is the giant Coosa River ordnance reservation built during the second world war. Principals are a group of southerners, many prominent in present-day Alabama business and finance, and others scattered in every city and town where newspaper publishers recognized and grasped the opportunity to participate in an enterprise aimed at both alleviating current newsprint shortages and declaring at least partial independence from northern and foreign sources.

Engineers Recommend Mill

Time of the narrative is just after the recent hostilities ceased. The big ordnance plant near Childersburg had discontinued operations. Local leaders foresaw the desuetude facing their community if other industry did not replace the powder making activities. They commissioned a prominent southern engineering firm, J. E. Sirrine & Co., of Greenville, S. C., to survey the scene and decide what could be done to prevent the almost certain decline to the pre-war economic level village.

Sirrine engineers advanced the idea that part of the ordnance plant could make the nucleus of a newsprint factory. Then began organization of the Coosa River Newsprint Co., headed by Alabamans and financed in part by the seventy-odd southern publishers, as well as by several insurance companies including the Metropolitan and by the Kimberly-Clark Corp., one of the world's large paper and products manufacturers. The latter will also manage the plant upon its completion.

Sirrine engineers then prepared the plans in collaboration with experts of the Kimberly-Clark company. Bids were asked. It was at this point where joint venture to construct the plant entered the picture. F. H. McGraw & Co., nationally acknowledged for its dexterity in huge and intricate mechanical installations, and Daniel Construction Co., prominent southern firm with many textile mills, industrial plants and other projects to its credit, were among the bidders.

Daniel-McGraw Selected

The McGraw concern, headed by Clifford S. Strike, dynamic construction executive, had just finished installing two crepe wadding machines at Memphis, Tenn. Kimberly-Clark was the owner and its officials were pleased both with the association and with the way the project was carried out. True to the South, the southerners in the new enterprise saw in the Daniel Company a leader in the industrial construction field.

Hence, the two were brought together to jointly act as general contractors for the Coosa River Newsprint Co. Great structures—one 1,100 feet long and 250 feet wide—have arisen on the 615-acre tract purchased from the federal government. That progress in itself accents the coordination and efficiency of the Daniel-McGraw combination.

Key Personnel Assembled

Success of the operations, of course, depends on the key personnel drawn from both the McGraw and Daniel organizations. These men—all experts and veterans in their fields—are supervised by an executive committee of three. D. W. Neville, a McGraw vice-president is chairman. The two Daniel brothers, Charles E. and R. Hugh, are the other members.

A Daniel engineer heads the Childersburg organization as project manager. He is C. G. Englund, long in the service of the Greenville concern. Ably assisting Mr. Englund is J. M. Curlee, the general mechanical superintendent, a McGraw

engineer and an expert in his field. C. A. Billings is the assistant project manager whose specialty is costs and scheduling. M. McDonough is project engineer.

J. W. Rice, Jr., the general construction superintendent is a Daniel man, as is his assistant, W. E. Allen, and the foreman of the various phases of architectural construction. These include W. Bussie, H. Marler, A. Burton, R. B. Dabbs, George Scott, Jr. Mayfield and C. Eunice.

Assistant to General Mechanical Superintendent Curlee is R. C. Oppel, the field mechanical engineer. Other members of the mechanical force include J. R. Nunez, A. J. Jones, W. Schlarb, J. B. Welch, C. Roma, Jr., and M. J. Lutz.

Ultra-Modern Plant Office

To this group of key men goes the credit for the fact that officers of the newsprint company are already occupying the new ultra-modern office building and that other of the plant's buildings are as much as ninety-five per cent finished in the twelve months since ground was broken.

One-story and of "V" shape, the brick office building with its wide-overhanging roof slab to shield from the southern sun is fluorescently lighted. It is heated by radiation from below the floors. Conditioned air flows from the circular, louvred outlets installed in the ceilings. Unique is the wall decbration in the form of Kimberly-Clark paper of high quality and artistic design.

The plant itself is a huge, sprawling layout west of the ordnance plant's 25,000-kilowatt power station and the 23,000,000-gallon water purification works which the Coosa company leased from the government to insure adequate power and water for the paper manufacturing undertaking. Power from the generators will enter the plant at 11,000 volts; steam at 150 pounds pressure in a 16-inch line and compressed air through an eight-inch pipe.

1100-Foot Long Structure

Longest structure is the 1,100-foot-long series of abutting buildings embracing the digesters, wash room, bleach plant, screen room shops and storeroom, grinder room, stock preparation space, machine room, pulp drying room and roll

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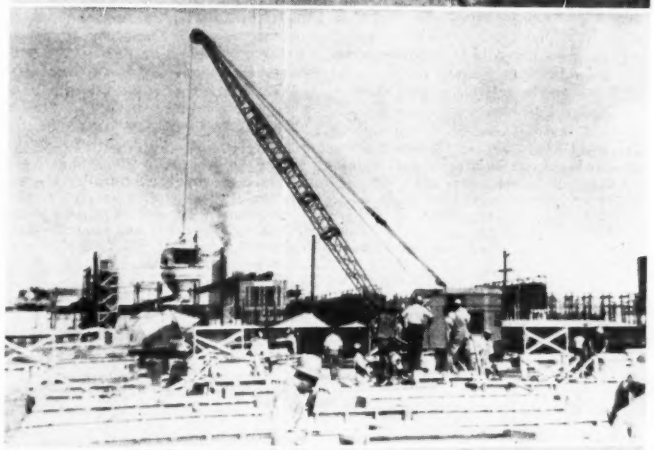
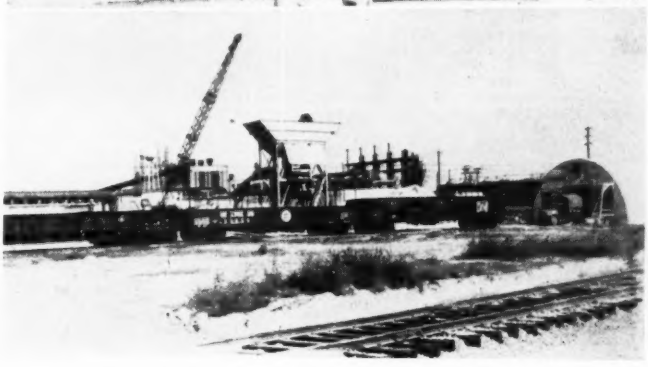
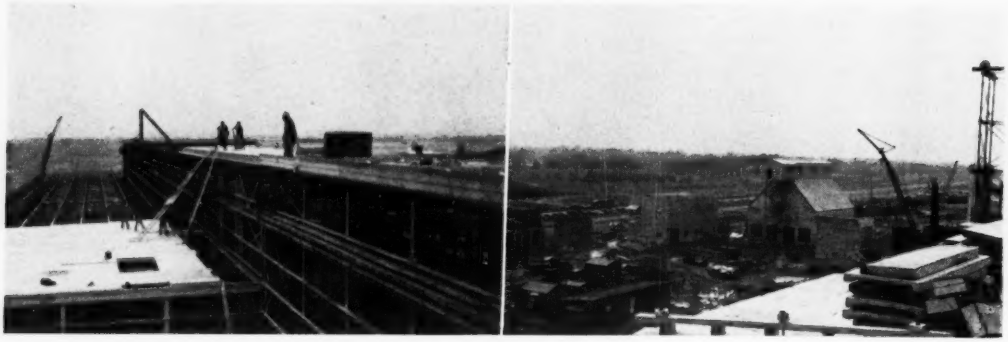




Right—Approximately 6,500 piles were driven for the foundations due to the limestone underlaying the site. The top picture shows pouring concrete into Raymond pile casing by means of a two-yard transit mixer, bleach plant area. Second view shows the pile drivers in action. In the third picture is the bulk plant. Capacity of the Blaw-Knox concrete plant is 400 cubic yards daily. A total of 32,000 cubic yards of concrete is being placed. In the bottom illustration, concrete is being placed in the pile caps, washer room area. Kimpreg-treated forms can be used up to 10 times. A total of 1,000,000 square feet is required. Of this amount, 770,000 is being used in the building work; the rest in the foundations. The chip bin, shown on page 30, is one of the structures requiring elaborate form work, the coal silo is another.

Daniel-McGraw at Coosa River—Continued



Above—Channel-type precast concrete roof slabs are shown in the view at the left being placed on the pulp drying-roll storage building. Workmen slide the slabs down the timber incline from the top of the machine room, to which they are lifted by elevator on the far side. Some of the channel slabs are pictured in the foreground of the view at the right. In the distance is the barn-like chip bin.

(Continued from preceding page)

storage area. Steel for this structure and practically all the others is up. Tall cranes, however, are engaged at the 165-foot recovery building.

Perpendicular to the main building's north end are the group of buildings linking the processing with the wood yard. These are in many shapes, one—the chip bin—resembling a great concrete barn; another, a lofty concrete coal silo being built still higher by the slip forms at its top. Work on the salt cake storehouse is in the early construction stages.

The recovery building is about 15 per cent finished. On one side are the evaporator foundations; on the other, the 225-foot-high brick stack which in itself is a specialized construction operation. To the south is a big elevated water tank and to the north beyond the conveyor connecting the chip bin with the digestor building is the 170-foot-long lime kiln, just recently placed on its concrete foundation. Provisions are made for a second similar unit. Nearby are the tanks for various liquors, as well as a hypo tower and a slacker building and kiln feed house. The wood room is closest to the big wood piles.

Six hundred feet of conveyors will move the logs to the two barking drums, which now rest in their concrete cradle foundations. Other conveyors connect with the process buildings. The system is of Link-Belt manufacture. Sixty-odd tanks are being installed. Many are already in place. These are Birmingham tanks furnished by the Inland Steel Co.

Approximately 6,500 piles were driven by the Raymond Concrete Pile Co. Ranging from 40 to 60 feet in length, these were necessary to insure firm foundations for both the buildings and machinery.

Kimpreg treated forms are being used in the concrete work. A Kimberly-Clark product, this impregnation, according to the contractors, permits the forms to be used as much as 10 times. Rigidity of the laminated forms, it is pointed out, cuts down the number of supports needed. Square footage of forms totals around 1,000,000, of which 770,000 is being used in the building work, the rest in the foundations.

A total of 32,000 cubic yards of concrete is being placed, much in the foundations for the heavy equipment being installed. Smaller structures such as the chip bin and the silo also are so constructed. The Blaw-Knox concrete plant has a daily capacity of about 400 cubic yards. Blaw-Knox mixer trucks are used to deliver the concrete to the point of pouring. An example would be in the floors, where a checkerboard pouring method is used to avoid cracking.

Brick work totals about 1,500,000 units; tile, about 300,000. Upper part of the bleach buildings and walls of the long paper machine building are brick. The 6,000 tons of structural steel is being furnished by the Virginia Bridge Co. The rest of the buildings, except those of concrete, will be enclosed with Johns-Manville Transite asbestos cement siding. Channel-type precast concrete roof slabs are being used. These are made by the Alabama Cement Tile Co.

Roofing and sheet metal work have been let to the Hahn Roofing & Heating Co.

(Continued on page 53)

Below—Upper Left—C. G. Englund, project manager, center, with J. W. Rice, Jr., general construction superintendent, left, J. M. Curlee, general mechanical superintendent, rear, and C. A. Billings, assistant project manager. Upper Right—Representatives of J. E. Sirrine on the job are, left to right, J. W. Cantrell, resident engineer; K. G. Taylor, civil engineer, and W. F. Hughes, mechanical engineer. Lower Left—M. McDonough, project engineer for the Daniel-McGraw organization. Lower Right—Frank J. McClean, secretary and controller of F. H. McGraw & Co. confers with A. F. Furlong, chief accountant at Childersburg.

Lauver

Above—Left—Typical room at the $20,000,000, 1,100-room Shamrock, the Southwest's newest and most elaborate hostelry. The airfoam rubber sofa-bed is readied for sleeping by pulling out the bottom and removing the throw. Every room has private bath with tub and shower, as well as individual air conditioning, radio and television facilities. Right—The Cork Club, a private organization occupying space in the hotel.

$20,000,000 Shamrock Opened at Houston

ST. PATRICK'S Day appropriately set the scene for opening of the $20,000,000 Shamrock, newest and most elaborate hostelry of the Southwest, built by the McCarthy interests at Main and Belaire streets, Houston, Texas.

Eighteen floors, plus a basement, part sub-basement, attic and machine room floor, the building is 253 feet high above grade and extends 24 feet below. In it are approximately 1,100 rooms and suites. Across the front it measures 350 feet. Its total space is 7,950,000 cubic feet, its total floor area, 654,985 square feet. It is built of reinforced concrete and is said to be the largest post-war hotel project.

Materials used in its construction consist of the equivalent of 690 carloads of sand and gravel: 190 carloads of cement: 4,200,000 pounds of reinforcing steel: 100 carloads of brick: 140 carloads of tile: 125 carloads of mortar and more than an acre of glass in aluminum casement windows. A total of 578 pounds of Minnesota Carnelian granite was used to face the first floor of the building.

1,000-Car Garage Included

The Shamrock garage is five floors high, with a full basement. Its overall height is 84 feet above grade, 12 feet below; each floor has an area of 50,537 square feet, or a total of 303,226 square feet, with space for 1,000 cars. Included in its equipment, in addition to service station, waiting lounge, rest rooms, gasoline tanks, pumps and washing and greasing facilities are a continuous lift for employes, a passenger elevator and "in and out" service.

Each room in the hotel, regardless of price, has individual air conditioning, the unit under each window delivering air of humidity and temperature controlled by the patron. Also in each room are individually controlled television receivers, and loudspeakers for radio programs or recorded music.

Robert D. Harrell, Inc., the interior designer, has devised what the owners believe to be the most comfortable sofa bed for use in the sleeping rooms. It is full twin size. By pulling the bottom out and removing the throw the bed is made up for the night. The sofa is airfoam rubber. The unit does not fold.

Architect for the big hotel was Wyatt C. Hedrick of Houston, with Tellepsen Construction Co., Inc., also Houston, the contractors. Stone & Webster Engineering Corp. acted as construction managers. Landscape architect was Ralph Ellis Gun of Jungle Gardens. Ground was broken March 17, 1946, the cornerstone laid May 1, 1948, and the hotel officially opened March 17, 1949.

Mahogany Lobby Panels

Walls of the 15-foot-high, 83- by 62-foot lobby are paneled in Honduras mahogany. Lighting is principally indirect. The three main fixtures are made of lucite, carved and shaded to give a cloud effect. Auxiliary lighting is from cold cathode tubes and is in concealed coves. Rose travertine marble columns blend with the fine woods.

Three promenades give access to the various parts of the hotel. These are named for the rooms they open into—Shamrock, Emerald, Grecian. The Emerald room is the largest of the public rooms. It is 103 feet square, has a 23-foot ceiling, supported its entire width by steel trusses, thus eliminating columns. Doors are emerald glass veneer fabricated to resemble huge gems.

Connecting directly with the main public rooms, the tiled kitchen contains all stainless steel equipment, including pressure cookers up to 150 gallon size, bench-type mixers, peelers capable of processing 70 pounds of potatoes in 75 seconds, a unit for making 12,000 rolls an hour, two machines for washing 15,000 dishes an hour, a sterilizer for handling 2,400 glasses an hour, a 270-slice per hour toaster and a silver washing, drying and burnishing machine. Garbage is stored in a refrigerated room to retard odors, then loaded into trucks inside the building.

30 Air Conditioning Systems

The Shamrock has 30 separate air conditioning systems. There are four major systems—one for each "exposure." Air is dried in the basement and delivered through high-pressure ducts to the units in the rooms. Filtered outside air is admitted to each unit for additional ventilation. All air is processed within the unit for humidity and temperature. This is done by finned coils supplied with hot, cool or ice water, as needed.

Steam-driven refrigeration units in the basement cool the water. These have a capacity equal to the melting of 3,000,000 pounds of ice daily. Refrigerant used is trichloromonofluoromethane, which is ordorless, non-irritating, non-inflammable, non-toxic and non-explosive. In the basement, Carrier centrifugal refrigeration machines are installed. This is said to be the first refrigeration equipment developed specifically for air conditioning.

Cold Cathode Lights

Most of the lighting in the public spaces is accomplished by use of cold cathode tubing in concealed coves. Addition of a measured quantity of incandescent light by means of deep, louvred fixtures flush in the ceiling is said to perfect the color balance of the fluorescent illumination. Electronic dimmers were installed to control the intensity in the Emerald and Shamrock rooms from 14 foot-candles to complete blackout. A "black light" installation in the Emerald space is pointed to as the largest single unit of its kind.

The boiler plant consists of three Babcock & Wilcox integral type watertube

(Continued on page 52)

Above—Savage River dam, as it remains uncompleted upon cessation of construction in 1942. Approximately 60 per cent finished, the project is on the Savage River, a tributary of the Potomac River, about four and one-half miles west of Luke, Md. The remaining work has been divided into two parts. Excavation and construction of the embankment has been awarded to Hunkin-Conkey Construction Co. and Shofner, Gordon & Hinman. The other contract will cover completion of the spillway, outlet works, slide gates and hydraulic equipment, operations house and miscellaneous structures and utilities.

Savage River Dam -Army Engineers Take Over, Will Finish Maryland W. P. A. Job

SAVAGE RIVER DAM is located on the Savage River, a tributary of the North Branch of the Potomac River, about 4½ miles west of Luke, Maryland. Purpose of the dam is creation of a reservoir of approximately 20,000 acre-feet (6,700,000,000 gallons), for the supplementation of the low water stream flow in the North Branch of the Potomac River, for industrial purposes, for alleviation of pollution in the river between Cumberland and Luke, and for incidental flood control benefits to the communities of Luke and Westernport, in Maryland, and Piedmont and Keyser, in West Virginia.

In Western Maryland

The North Branch of the Potomac River above Cumberland, Maryland drains a mountainous area of 875 square miles in western Maryland and West Virginia. Run-off from the area is rapid, resulting in frequent floods during the spring and fall periods, but also resulting in small flows during the dry summer months. For many years, large industrial developments located on the shores of the North Branch of the Potomac River between Cumberland and Luke have suffered on account of the inadequacy of the water supply during the summer months. Such plants as West Virginia Pulp and Paper Co., the Celanese Corp., and Kelly-Springfield Tire Co., have been forced on frequent occasions to curtail operations, and occasionally to suspend operations entirely, due to lack of processing and cooling water.

In addition, during dry periods, the water flow in the river has been insufficient to properly dilute sewage and industrial wastes discharged into the river at Cumberland and upstream communities. Citizens of the area have long recognized the need for measures to alleviate this condition.

A committee was formed about 1933 under the name of the Upper Potomac River Board, to study means for the solution of this problem. The Board retained the engineering firm of Gannett, Seelye and Fleming, of Harrisburg, Pa., to make a survey for a possible dam site necessary to create a reservoir of sufficient capacity to supplement the flow of the North Branch of the Potomac River during dry periods. Several tributaries of the North Branch of the Potomac River were studied, and all except the Savage River were eliminated either by reason of inadequacy of the watersheds or pollution of their waters from mine wastes.

W.P.A. Grant for Surveys

Actual progress toward construction of the dam and reservoir could not be made by the Upper Potomac River Board, since the Board had no legal status. In order to deal adequately with the situation, the Upper Potomac River Commission was created by legislative act of the State of Maryland in 1935, with full power and authority to purchase land and to contract for construction of the dam. The Commission so created, secured a Works Progress Administration grant for surveys, and preparation of plans and specifications by the Corps of Engineers, Department of the Army. After a careful survey the Corps of Engineers selected the site for the dam now being constructed, and prepared the necessary plans and specifications.

Design by Army Engineers

The dam designed by the Corps of Engineers was an earth and rock fill structure 175 feet high and 1,050 feet in length along its crest. The plans provided for a side channel concrete-lined spillway along the left abutment of the dam, and a 10-foot horseshoe-shaped diversion tunnel was planned under the right abutment. Needle valves with a capacity of 100 s.f., the maximum requirement for low water supplementation, were to be installed in the diversion tunnel, after the tunnel had served its purpose during the construction period.

Construction of the dam was initiated by the Upper Potomac River Commission and the Works Progress Administration in September, 1939, and was carried on with relief labor, and sponsor-provided equipment, materials and supervision until December, 1942, when the work was stopped on orders of the War Production

Board. As a result of this construction the project as originally planned is approximately 60 per cent complete.

In the Flood Control Act of 1946, the Congress of the United States authorized the completion of the dam, and directed the prosecution of the work by the Corps of Engineers, Department of the Army. In compliance with the above directions the Chief of Engineers, U. S. Army, has assigned the project to the District Engineer of the Washington District, Corps of Engineers.

Flood Control Features Added

Original plans for the dam did not include the provisions for flood control which have now been incorporated. In addition, revised data for the maximum possible flood indicates the need for providing for a spillway capacity of 100,000 s.f. as compared with a maximum of 70,000 s.f. for which the spillway had been originally designed. Accordingly, a redesign of the project was accomplished by the Washington District to meet these revised criteria.

An important feature of the redesign was adaptation of the work required for completing the project to previously completed construction. Thus, the spillway now approximately 85 per cent complete, will not be materially changed. Increased magnitude of the maximum flood will be provided for by increasing the height of the dam embankment by 9 feet. The tunnel, already lined except for a section of approximately 50 feet originally reserved for the needle valves installation, is not to be disturbed. However, to secure the full benefit of the tunnel capacity for lowering the reservoir in advance of floods, this uncompleted section of the tunnel has been redesigned to provide two 4- by 10-feet conduits controlled by hydraulically-operated slide gates, in lieu of the originally planned needle valves.

Low Water Regulation

Low water discharges will be regulated by a bypass around the slide gates. The bypass will be controlled by a motor-operated throttling valve with remote push button controls in the Operations House. The valve will control discharges varying from 10 s.f. to the maximum designed discharge of 93 s.f.

An additional bypass around the slide gates with an intake in the tunnel is provided for domestic water supply to the town of Westernport, Maryland. The bypass is of ample size to provide for the future needs of other communities downstream of the dam.

Two Current Contracts

In the interest of economy, completion of the project will be executed under two construction contracts. One requiring mainly heavy earth-moving equipment, covers excavation and construction of the embankment. The other contract will cover the completion of the spillway, outlet works, installation of slide gates and hydraulic equipment, construction of the operations house, and miscellaneous structures and utilities.

Bids for the excavation and construction of the embankment, representing the first construction contract, were opened 1 February, 1949. The Hunkin-Conkey Construction Company and Shofner, Gordon and Hinman were the low bidders and have been awarded the contract for this work. Construction started in March, 1949. (The details of the bids were shown in CONSTRUCTION for February, 1949.)

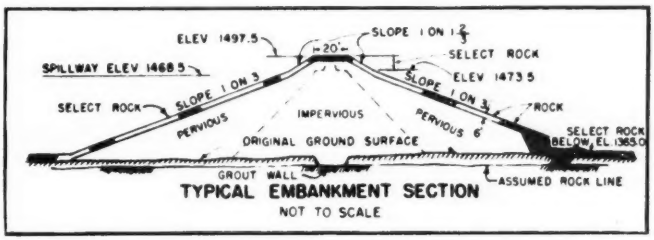
Col. H. C. Wolfe in Charge

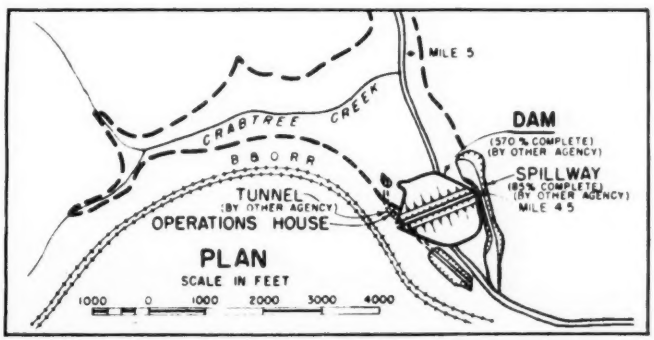
The project is under the general direction of Col. Henry C. Wolfe, Corps of Engineers, District Engineer of the Washington District. Byron Bird is chief of the engineering division; D. V. C. Birrell, chief, flood control and power branch, is in general charge of the designs and preparation of plans and specifications; and W. J. Yarnoff is in immediate charge of the preparation of plans and designs. P. C. Dorr, chief of the construction division of the Washington District, is in charge of construction operations.

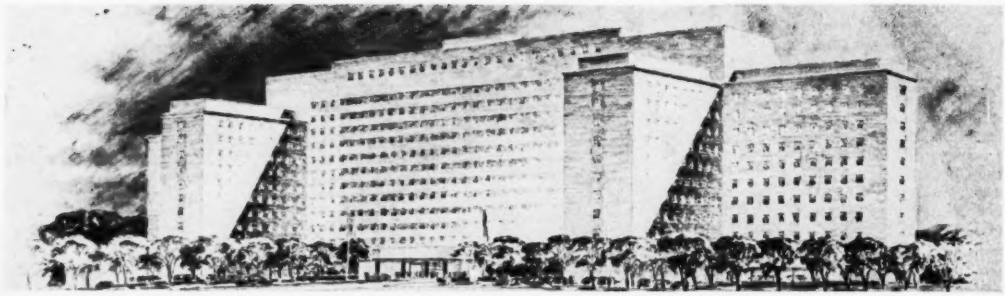
Upon completion of the Savage River dam the project will be transferred to the Upper Potomac River Commission for operation and maintenance. Members of the commission are John J. McMullen, chairman, Owen E. Hitchins and Neil C. Fraley.

SAVAGE RIVER DAM DATA

DRAINAGE AREA		
(a) Savage River (above dam)	76	sq. mi.
(b) Crabtree Creek	29	sq. mi.
Total	105	sq. mi.
RESERVOIR		
(a) Acreage (At elev. of spillway crest)	360	acres
(b) Storage (At elev. of spillway crest)	20,000	acre feet
DAM		
(a) Length of dam	1,050	feet
(b) Height of dam above stream bed	184	feet
(c) Elevation top of dam	1,497.5	m.s.l.
SPILLWAY		
(a) Length of crest	320	feet
(b) Elevation of crest	1,468.5	m.s.l.
(c) Discharge capacity—23.2' depth on crest	100,000	c.f.s.
(d) Type of spillway	Side-Channel	
OUTLET STRUCTURE		
(a) Length of outlet tunnel	1,170	feet
(b) Size of tunnel (Horseshoe-shaped)	10	feet dia.
(c) Discharge capacity (23.2' depth on spillway crest)	4,850	c.f.s.
(d) Slide gates—2 twin sets, 4' x 10' hydraulically operated		
MAJOR ITEMS OF CONSTRUCTION		
(a) Common excavation and stripping	338,000	c.y.
(b) Rock excavation	440,000	c.y.
(c) Excavation in Borrow Areas	2,156,000	c.y.
(d) Earth fill in embankment	1,757,000	c.y.
(e) Rock fill in embankment	348,000	c.y.
(f) Concrete	28,000	c.y.







Above—Perspective of the new multi-million dollar clinical center, the foundations for which are now under construction at Bethesda, Md. The headhouse, or major east-west axis of the building will be 779 feet, 3 inches; principal east and west wings will measure 358 feet, 6 inches. There will be a total of six wings—four of 11 stories and two of five stories. The building will have a reinforced concrete frame with brick exterior and limestone trim. The grade course and entrance treatment will be of granite.

P. B. A. Soon to Ask Bids on Clinical Center at Bethesda National Health Institute

BIDS will be advertised during May for erecting the superstructure of the huge 13-story, brick clinical center at the National Institute of Health, Bethesda, Md., it is announced by the Public Buildings Administration, which already has let the $3,273,000 contract for clearing the site and constructing the substructure. McCloskey & Co., Philadelphia, holds this contract.

The new building will house the National Institute of Mental Health and hospital facilities of the National Cancer Institute, the National Heart Institute and the National Institute of Dental Research, as well as services for studying patients with infections and tropical diseases. Scientific laboratories will occupy two-thirds of the building.

To Have Six Wings

There will be six wings extending from the central structure. A two-corridor plan will permit close relationship between the clinical care and investigative areas. A wide range of adaptability for changing needs will be afforded by demountable partitions and equipment, module construction, grouped service line outlets and standardized laboratory benches.

The hospital on the south side of the main building will accommodate 500 patients. The north side of the main building and the six wings will be devoted to research laboratories. New products from atomic energy studies will be handled in one of the wings, where highly intricate machines already designed will be installed.

Buildings Administration Design

Designed by the Public Buildings Administration under direction of W. E. Reynolds, the Commissioner, the building embraces the best thoughts and talents of leading architects and engineers throughout the country. These include James R. Edmunds, Jr., noted Baltimore architect and former president of the American Institute of Architects, Carl Erikson, member of a Chicago firm specializing in hospital architecture and Aaron Kiff, New York designer of many big hospitals.

The building will have a reinforced concrete frame, with brick exterior and limestone trim generally. The grade course and entrance treatment will be of granite. Fireproof construction will be specified throughout. Due to variations in elevation of subsurface material of satisfactory bearing capacity, both spread footings and caissons are being used in the foundation. An electrostatic generator weighing 135 tons is one of the unusual loads that must be supported.

A penthouse, necessary for essential mechanical equipment, will also contain space for patient morale-building features. There will be four wings of 11 stories and two wings of 5 stories, supported upon a full basement, a sub-basement of about one-half the area of the building and a sub-sub-basement covering about one-ninth of its area.

779 by 358 Feet

The headhouse or major east and west axis of the building will be 779 feet, 3 inches in over-all dimension. The principal east and west wings will measure 358 feet, 6 inches over-all. The gross floor area of the building will approximate one and a quarter million square feet. It will have dual corridors, supplemented by conveniently placed banks of passenger and freight elevators. The two-corridor plan in the central portion of the building permits close proximity of the clinical care area and the clinical investigative area. Solaria will be provided on each floor from the second to the thirteenth.

Clinical research laboratories and offices will be located directly across the corridor, easily accessible and immediately adjacent to the clinical facilities. The second corridor is for connection between the laboratories located along the north wall, farthest from the patient rooms. It also makes all of the facilities of the research laboratories and clinical nursing areas easily accessible, one to the other.

Basement and sub-basement will house special employee facilities including a well-lighted, attractive cafeteria; ample and comfortable locker rooms; and the hospitality shop, bank and post office which will be available to both employees and patients. In this area there will also be central supply facilities including a blood bank and equipment for preparation and sterilization of intravenous solutions.

Boiler House Included

The service buildings, boiler house, incinerator, laundry, etc., will be located south of the main building, placed inconspicuously and far enough away to minimize noise. Equipment will be provided for the elimination of smoke.

A tunnel will be constructed connecting the service buildings and the main building. It will be large enough to carry the necessary wiring and piping and to allow the use of hand or self-propelled trucks for movement of laundry, materials from storerooms and disposal of refuse. Tunnels and covered passageways have been planned to connect the main building and the present research laboratories to the east.

Off-Street Parking

Off-street compounds will provide parking space for 1,600 automobiles. These parking areas will be strategically located, their capacity being related to the needs of the various activities they serve. Landscaping will be simple, dignified and restrained as a matter of esthetics as well as economy in upkeep.

Administrative offices and an auditorium, with seating capacity of 500, will be located on the first floor. The neuropsychiatric section also is planned to occupy portions of the lower floors. This section will have a separate exit to pa-

(Continued on page 36)

Above—Dewey Dam on Johns Creek, about five miles from Prestonsburg, Ky., Ryan Construction Corp., contractor.

Dewey Dam in Kentucky 91 Per Cent Finished

DEWEY DAM is located on Johns Creek about 5½ miles above its mouth, approximately 10 miles by country road from Paintsville, Ky., and about 5 miles northeast cross country from Prestonsburg, Ky.

Ryan Construction Corp., of Evansville, Ind., was low bidder with a bid of $1,994,213.60 and was awarded the construction contract. The starting date was March 26, 1946, with 660 days allowed in which to complete the work. The contractor started moving equipment to the job early in April, 1946. Subsequent change orders have increased both the work and the time allowed and at present the project is 91 per cent finished with the completion date set for July 11, 1949.

Earth Embankment Dam

Dewey Dam is an earth embankment dam with an overflow spillway and an outlet works which is to be used to control the flow of water from the reservoir. The dam is a rolled fill barrier consisting almost entirely of impervious material with dumped stone on the upstream slope to afford protection from wave action. The dam is approximately 850 feet long at the top which is at Elevation 718 or about 113 feet above the stream bed. The bottom width is 680 feet and the top width is 30 feet. An access road across the top permits access to the outlet works structure. The dam contains approximately 692,000 cubic yards of earth fill.

The outlet works consists of a concrete control structure, a tunnel and a stilling basin. The concrete control house is 140 feet high and contains the gates and operating equipment which is used to control the flow from the reservoir. The 463 foot tunnel is horseshoe shaped, 11½ feet in diameter and is lined with concrete. The gravity spillway is located in back of the left abutment and is concrete lined. Concrete totaling 20,000 cubic yards will be placed in the structures when completed. Spillway crest is at Elevation 686.

Drain 207 Square Miles

The dam will control the water from a drainage area of 207 square miles and will provide storage for 88,000 acre feet at spillway elevation. Of this amount 77,000 acre feet will be allocated to flood control and 11,000 acre feet to conservation. The conservation pool will be at Elevation 645 and will extend approximately 11 miles upstream. At spillway elevation the pool will extend 30.5 miles upstream and will cover approximately 3,100 acres.

Ryan Construction Corp. used the bench and header method in tunneling through the sandstone for the outlet tunnel. Drilling was done by drifter drills, air for which was furnished by portable gasoline or diesel driven air compressors. The broken rock was loaded into mine cars by a ¾ cubic yard Traxcavator and hauled to the spoil areas by mule. The concrete batching plant was set up at Van Lear, Ky., and the batches hauled to the dam site by dump truck. A paving mixer was used and the concrete was placed by bottom dump bucket in the outlet structure or spillway and in the tunnel by a pumpcrete machine.

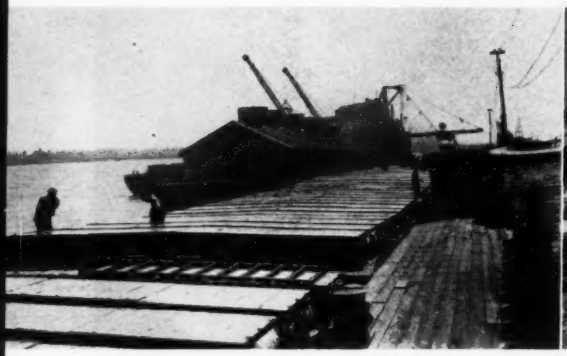
The earth fill was obtained from borrow areas located in the area adjacent to the dam. The material was hauled to the embankment by Athey wagons pulled by Caterpillar tractors and Tournapulls equipped with self loading scrapers. Power shovels were used to load the Athey wagons. The fill was leveled by patrol graders and compacted with sheepsfoot rollers.

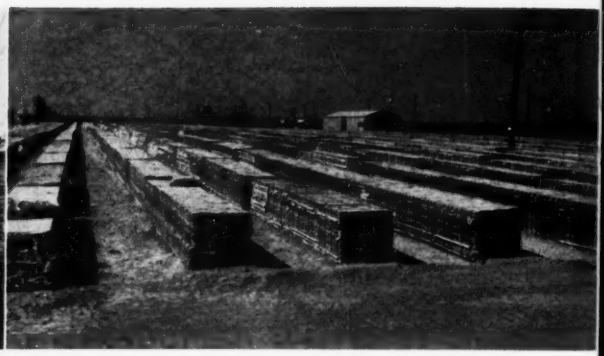
In order to prevent water from backing up and flowing over one of the low saddles in the drainage area, an earth dike was constructed at this location. The dike contained approximately 50,000 cubic yards of material.

Rock Excavated and Stocked

Rock from the excavation of the spillway and tunnel was stockpiled and used for protection of the upstream slope of the earth dam, and was also crushed on the job and used as a filter blanket under the downstream toe of the embankment and for the surfacing of the access roads.

Dewey Dam is being constructed by the Ryan Construction Corp., of Evansville, Ind., under supervision of Philip A. Ryan and Roy Ryan, Jr. Herbert W. Witte is resident engineer for the Corps of Engineers, with John J. Konrad, chief of the construction division and Harry Peckras, chief engineering assistant. Col. A. M. Neilson is district engineer of the Huntington District of the Corps of Engineers.





Above—Left—Barges on which the articulated concrete mats were both cast and transported to site of sinking operation. Right—Newer method of casting on land in tiers from 12 to 14 mats high in much the same manner as on barges.

Handling Method for Concrete River Mattresses Improved by Vicksburg Army Engineer Office

WHEN the Vicksburg District, Corps of Engineers, moved its articulated concrete mat casting operations from water to land in 1937, it was confronted with a problem of how to best handle the concrete mats with the least damage to them. Prior to this time the extremely flexible 4 foot by 25 foot concrete mats consisting of twenty 3-inch thick concrete blocks held together by non-corrosive reinforcing fabric were cast in tiers on barges using a floating concrete mixer. The same barges on which the mats were cast were used to transport them to the site of the sinking operation. The only time that the individual concrete mats were handled was when they were picked up from the barge by the mat boat crane and placed on the deck of the mat boat prior to being assembled.

New Handling System Needed

With the change in the mattress casting procedure it was evident that with the new system of casting, the mattress would have to be handled at least three times before reaching the deck of the mat boat. This posed a peculiar problem for several reasons: (1) The extreme flexibility of the mattress made it difficult to handle, and (2) the nature of the materials composing the mat: namely, the thin concrete slabs and the semi-flexible reinforcing fabric necessitated careful handling to prevent cracking the concrete or deforming the fabric. Deformation beyond certain limits could not be tolerated because of the small tolerance allowable during the assembly of the mat on the deck of the mat boat. Heretofore, handling of the individual squares of mat the one time when they were transferred from the mat barge to the mat boat was by means of mat frames having hooks which engaged the fabric brackets extending beyond the edge of the concrete on either side of the mat. There were ten teeth or hooks on either side of the frame which gave twenty suspension points for the square of mat.

Although expert handling resulted in only slight deformation of the fabric it frequently occurred that the fabric bracket wires were deformed some and it was correctly assumed that if each individual square of mat were handled three times, enough of the fabric bracket wires would be pulled out of shape to cause considerable trouble during the assembling on the deck of the mat boat. In view of this fact considerable time and study was given to the problem of handling the concrete mat prior to changing the mat casting operation from barges to land.

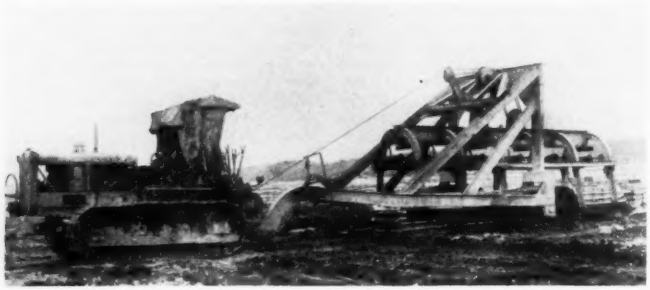
Two Squares Lifted at Once

Concurrently with the problem of handling the mat was the one of transporting the mat from the point where it was cast to the river and loading it on barges. Consideration was given to the idea of using mat handling frames with teeth or hooks so constructed that they could pick up two or more squares of mat simultaneously. This method was entirely practicable and is still used at some casting fields along the river. At the Greenville, Miss., Casting Field, however, where the land casting and mattress handling operations were pioneered, this method was quickly discarded and a more expeditious and economical method developed. In the land casting operations the mat is cast in tiers 12 to 14 mats high, one mat on top of the other the same as had been done previously when casting on barges.

Special Design Used

It soon became apparent that handling the complete tier of mats would be most advantageous. In looking around for equipment to handle this load of approximately 25 tons of flexible mattress, it was found that no commercial equipment on the market was satisfactory. It was therefore necessary to design and construct a piece of equipment capable of picking up a tier of concrete mattress and transporting it any required distance in order that it could be loaded on barges.

Below—Mat-hauling trailer consisting of an H-frame mounted on 30-ton Athey crawler tracks having V-type base frame. The suspended grappler frame has a series of six pairs of arms so connected by pins at the top as to open and close similar to a clamshell.



A mat hauling trailer pulled by a D-8 Caterpillar tractor was designed and built which admirably served the purpose for which it was intended and which subsequently led to the development of the improved type unit now in use.

A-Frame on Athey Tracks

The trailer proper consisted of a heavily constructed H-frame mounted on 30 ton Athey crawler type tracks having a V-type base frame which supported the I-beam braces reinforcing the H-frame. From this V-type base extended a box girder tongue which connected to the D-8 tractor. Built into the top of the H-frame were sheaves so arranged that a cable from a winch mounted on the back of the tractor could, through a two part line, raise or lower a grappler frame which was suspended from the H-frame between the two Athey tracks.

The grappler frame proper was constructed of a series of six pairs of arms pin-connected at the top so that they could open and close similar to the way in which the arms of a clam shell bucket open and close. Power for opening and closing these arms, however, was from double acting hydraulic cylinders placed between each pair of arms. The ends of the arms on each side were connected by a heavy angle in such position that when the arms were in a closed position the bottom leg of the angle was parallel to the ground surface.

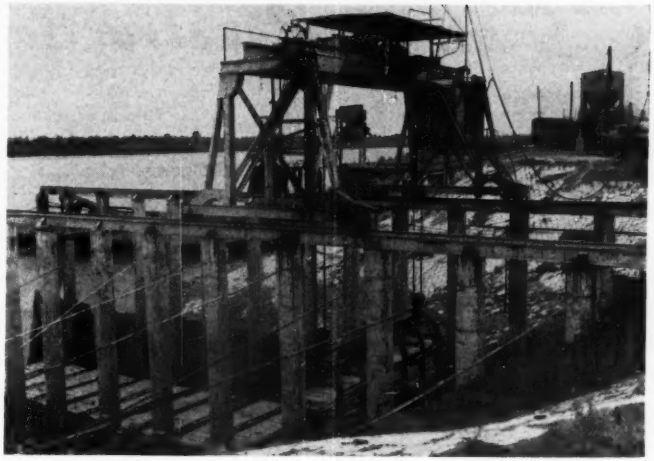
Hydraulically Operated

The pump for operating the hydraulic cylinders was located on the tractor and the opening and closing of the grappler frame by means of the hydraulic controls and the raising and lowering of the grappler frame by the cable control was all operated by the tractor operator. In operation the grappler frame was raised clear of the ground, the arms opened and the trailer backed over the tier of mat so that the tier was in the center of the open arms of the grappler frame.

The grappler frame was then lowered to the ground and the arms hydraulically closed forcing the bottom leg of the continuous angle irons on either side of the grappler frame under the edges of the concrete mat. The grappler frame was then raised, picking up the tier of mat clear of the ground by several inches. The tractor then could tow the trailer and load any distances necessary. In designing the grappler frame adequate clearances were provided and stops installed so that neither the concrete nor the fabric would be crushed or damaged in any way during the handling.

Transporting to Barges

In order to load the tiers of mat on barges for transportation to the mattress sinking plant, it would have been ideal if the entire mat hauling unit could have been run directly on to the barge. This was not practicable, however, due to the size of the mat hauling unit and to the deck fittings on the barge. It was therefore apparent that the mat would have to be transported to a site adjacent to the top bank and then rehandled to the barge proper.



Above—Barge slip with its traveling gantry crane for handling the mat grappler. Fluctuation in river levels resulted in later loading the mat from bank to barges by long-boom floating Whirley derrick.

The first method devised for accomplishing this purpose was a barge slip over which was constructed a traveling gantry crane which handled a mat grappler frame similar to the one forming a part of the mat hauling trailer. In operation the empty barge was placed in the slip which was at right angles to the bank line, then the tier of mat was hauled to a point just landward of the slip.

Overhead Gantry Crane

The tracks for the overhead gantry crane extended beyond the slip to the point where the tier of mat was deposited and in this manner the gantry crane by means of the mat grappler frame picked up the tier of mat then moved out over the barge slip where the grappler frame with its load of 12 to 14 squares of mat was lowered on to the barge. After coming to rest on the barge the tier of mat was released by the reverse action of the hydraulic cylinders in the mat grappler frame.

This method was quite satisfactory except that because of the fluctuation in river stages it was necessary that the overhead gantry be some 40 feet above the low water elevation which meant that when loading mat at low water it was necessary to lower the mattress through a vertical height of approximately 40 feet. Since a five part line was used this operation was obviously slow.

As a result of this undesirable feature of the barge slip and gantry crane operation, it was later found more economical to load mat from top bank to barges by using a long boom floating Whirley derrick. In this operation the Whirley derrick uses a mat grappler frame to pick up a tier of mat which has been deposited by the mat hauling unit on a short pier extending from top bank out over the water, then swings around and places the tier of mat on an adjacent mattress material barge.

Actual operations showed that certain

(Continued on page 52)

Below—A rubber-tired Tournadozer with the blade was substituted for the Athey wagon. Pallets for handling the mats have 2-inch decking bloted to 4 by 4-inch runners. The decking extends sufficiently for the grappler to secure a firm purchase beneath.

Southern Construction Projects

HIGHWAYS, BRIDGES

(Continued from page 15)

Cave City-Sulphur Well Rd.; bridge, grade, drain and traffic-bound limestone, 1.359 mi.; Ruby Construction Co., Madisonville, Ky.; $105,717.

Mason—Proj. No. S-87(2), SP-81-215; Maysville-Brooksville Rd.; George H. Cheek, McClure Bldg., Frankfort; $132,064.

Edmonson—Proj. No. S-260(5), SP 31-38, Brownsville-Leitchfield Rd., Brownsville Bridge floor; Cofell Construction Co., Winchester; $120,813.

Livingston—FG 530(3), SP 70-150; Paducah-Eddyville Rd., overhead bridge; Wellner Construction Co., Winchester; $156,613.

Boyd—F 1(4), FG 8(4), SP (30-165) (10-285), Ashland, Grayson Rd., 6.750 mi. bituminous surface; Middle States Bituminous Corp., Ashland, Ky.; $306,227.

LOUISIANA

BATON ROUGE—Department of Highways let contract to T. L. James & Co., Ruston, for paving of approaches to Red River Bridge at Moncla in Avoyelles Parish; $233,565.

BATON ROUGE—Department of Highways let contract for projects in following parishes:

Caddo—State Proj. No. 18-01-03, Longwood-Mooringsport Hwy., Rt. No. 504; 8.7 mi. shaping roadway, drainage, structures, gravel base course; T. L. James & Co., Inc., Ruston; $167,583.

St. Mary—State Proj. No. 213-02-10, North Bend Bayou Sale Hwy., State Rt. No. 60; 5.45 mi. shaping roadway, small drainage structures, gravel base course; Stevens & Co. Whitney Bldg., New Orleans; $133,461.

St. James—State Proj. Nos. 256-04-04 and 256-05-07, Remy-Ascension Parish Line Hwy., State Rt. No. 1; 17.4 mi. aggregate type base course; LeBlanc Brothers, La. National Bank Bldg., Baton Rouge; $222,430.

Tangipahoa—State Proj. No. 263-04-05, Kentwood-Washington Parish Line Hwy., State Rt. No. 71; 8.43 mi. shaping roadway, drainage structures, aggregate type base course, timber trestle bridge repairs; Barber Brothers, Raymond Bldg., Baton Rouge; $165,450.

Plaquemines—Concrete span and approaches over Doullut canal on State Rt. 31; Kelly Generes Construction Co., 134 Carondelet, New Orleans; $382,140.

BATON ROUGE—Department of Highways received low bids for projects in following parishes:

Livingston and Tangipahoa—State Proj. Nos. 13-07-07 and 13-08-05, Fed Aid Proj. No. F 79(4), Little Natalbany River Bridge and approaches and Natalbany River bridges, State Rt. No. 7; 4.175 mi. grading, reinf. conc. deck girder bridges, multiple reinf. conc. box culvert and Portland cement conc. pav.; W. R. Fairchild, Box 127, Hattiesburg, Miss.; $353,016.

Cameron—State Proj. No. 193-01-08, Fed. Aid Sec. Proj. No. S-72(1), State Rts. Nos. 42 and 202; 3.960 mi. grading, drainage struc. soil cement base course; Stevens & Co., Inc., Box 28, New Orleans; $168,258.

Calcasieu—State Proj. No. 3-44-20, Fed. Aid Proj. No. F-35(16), Sulphur-Westlake Hwy., State Rt. No. 2; 6.71 mi. grad. shoulders; patching and widening Portland cement conc. pav. and surf. with bit. mix for hot applica.; T. L. James & Co., Inc., Ruston; $402,166.

Beauregard—State Proj. No. 28-04-06, Deridder-Oberlin Hwy., State Rt. No. 52; 8.47 mi. shaping roadway, drainage struc., aggregate base course, reinf. conc. deck girder bridges; Carruth Contracting Co., Box 2191, Baton Rouge; $311,398.

NEW ORLEANS—City sold $4,000,000 street improvement bond issue to First National Bank of New York and Halsey, Stuart & Co., Inc., and Associates.

MARYLAND

BALTIMORE—State Roads Commission received low bid for projects in following counties:

Caroline—Contract No. Co-210-1-215; grading, drainage and surfacing of relocation of U.S. Rt. No. 313 and State Rt. No. 404, for distance of 1.083 miles; Eastern Highways Corp., Belle Grove Rd.; $168,263.

Worcester—Contract No. Wo-285-1-150; grading, and drainage of section of State Rt. No. 589, distance of 1.803 miles; Hannaman-Burroughs Co., Salisbury; $110,958.

Allegany—Contract No. A-415-1-615; furnishing, delivering and applying of bituminous concrete surfacing, State Rt. No. 51, 3.47 mi.; Keeley Construction Co., Clarksburg, W. Va.; $205,390.

Talbot—Contract No. T-125-1-215; grading, drainage and surfacing of section of State Rt. No. 404, 0.538 mi.; George & Lynch, Wilmington, Del.; $104,326.

Garrett—Contract No. G-237-1-615; furnishing, delivering and applying of bituminous concrete surfacing, U.S. Rt. No. 50, 9.30 mi.; Cumberland Contracting Co., Cumberland, Md.; $100,064.

Caroline—Contract No. Co-210-2-215, construction of steel beam and concrete bridge over Watts Creek on relocation of State Rt. 313; Baltimore Contractors, Inc., 711 S. Central Ave.; $102,139.

Montgomery—Contract No. M-350-3-315, grading, drainage and surfacing of section of Wisconsin Ave., 0.65 mi.; Wilmoth Paving Co., 60 P. SE, Washington, D. C.; $339,488.

BALTIMORE—State Roads Commission let contract for following project:

Contract No. B-332-5-415, grading, drainage and surfacing of relocated section of Sulphur Spring Rd., in Arbutus, 0.596 mi.; Frank L. Carozza, 511 Park Ave.; $345,006.

MISSISSIPPI

HATTIESBURG—Board of Supervisors of Forrest County received low bid from Cook Construction Co., Standard Life Bldg., Jackson, for grading, drainage structures, culverts and bridge on 0.624 mi. on county highway in Forrest County, known as Un Numbered County Proj. (River Avenue Bridge); $310,776.

JACKSON—City proposed extension of city streets approximately 2 mi. and authorized $111,000 loan.

JACKSON—State Highway Commission let contract for project in following county:

Lauderdale—Overhead bridge in Meridian; J. H. Moon, Port Gibson; $144,877.

MISSOURI

JEFFERSON CITY—State Highway Commission received low bids for projects in following county:

Jackson—Proj. No. UI-88(3)a, 0.156 mi. bridges and retaining walls; Swenson Construction Co., 3305 Terrace, Kansas City, Alt. 1, $476,911, and Alt. 2, $432,125.

OKLAHOMA

OKLAHOMA CITY—State Highway Department let contracts for projects in following counties:

Canadian—U.S. 66, 1.575 mi. grading, drainage, concrete paving, Yukon east; Amis Construction Co., 1647 Exchange Ave., Oklahoma City; $285,825.

Comanche—1.996 mi. grading, drainage, gravel surface beginning at SH 7; P. & H. Construction Co., 3715 NW 23rd, Oklahoma City; $11,142.

OKLAHOMA CITY—State Highway Commission received low bid for project in following county:

Ellis—U.S. 6,601 mi. grading, drainage, stabilized asphalt surface, bituminous surface beginning at Texas state line; Broce Construction Co., Woodward; $158,656.

SOUTH CAROLINA

COLUMBIA—State Highway Department, C. R. McMillan, Chief Hwy. Comm., let contract for project in following county:

Greenwood—SC Doc. No. 24,249, Parts 1, 2 and 3—F. A. Proj. No. U-55(7) Parts 1 and 2, U.S. Rts. 25 and 178; widening and resurfacing with asphaltic concrete of 1.820 mi. on South Main St. from Oregon Street to Kirksey Drive; C. Y. Thomason Co. and E. H. Hines Construction Co., Inc., Greenwood; $308,139.

TEXAS

AUSTIN—State Highway Commission held public hearing requesting projects in following counties:

Garza—Bridge across double Mountain Fork of Brazos River to close a gap in Farm Rd. 122; est. $121,000.

Van Zandt—82 mi. of farm roads to be partly financed by proposed $2,500,000 countywide bond issue.

Coryell—Completion of State Hwy. 36 with 4.8 mi. of road northwest of Flat.; $243,000.

Rockwall—Completion of State Hwy. 205 by building of 2.9 mi. at $155,000 to give bypass to southeast of congested Dallas area.

Wharton—72 additional mi. of farm road in addition of 1950-51 secondary program, $671,500; county has voted $3,250,000 bond issue to finance first share and 301 mi. of tie-in county roads.

AUSTIN—State Highway Commission plans bridge project in following counties:

Franklin and Red River—A new bridge across Sulphur River on U.S. Hwy. 271; $100,000.

AUSTIN—State Highway Commission received low bids for projects in following counties:

Dallas and Kaufman—U.S. 175, 6.07 mi. concrete pavement from .5 mi. west of Seagoville to Rd. 148; Texas Bitulithic Co., 111 Commerce, Dallas; $343,185.

Hamilton and Bosque—State 22, 17.06 mi. flexible base and double asphalt surface treatment; Houston Clinton, 1110 S. 5th, and M. D. Corbin, 2824 Colonial, Waco; $210,723.

Live Oak—U.S. 281, 10.19 mi. flexible base and asphaltic concrete pavement from 1,000 ft. south of Atascosa County line to State 9; E. E. Hood & Son, Mission Rd., San Antonio; $106,816.

Robertson—U.S. 79, 4.3 mi. Little Brazos River bridge and approaches 2 mi. southwest of Hearne; Norman L. Larson, 2410 Jarrett, Austin; $121,501.

Collin—Rd. 543, 7.61 mi. grading, drainage structures, stabilized foundation course and single asphalt surface treatment from Weston to 1.5 mi. east of Roland; Ernest Loyd, 3104 Wayside, Ft. Worth; $104,161.

Dallas—Hwy. US 75; 0.2913 mi.; Austin Bridge Co. and Austin Road Co., P. O. Box 1753, Dallas; $334,519.

Rains—Hwy. St. 19; 6.056 mi.; Collins Construction Co., P. O. Box 1192, Austin; $131,321.

Angelina—Hwy. US 69 and FM 841; 0.636 mi.; Russ Mitchell, Inc., P. O. Box 8056, Houston; $442,622.

Bee—Hwy. US 59; 12.540 mi.; Killian House Co., P. O. Box 1581, San Antonio; $214,251.

Dallas—Hwy. US 67 and 80; 1.498 mi.; L. H. Lacy, 5630 Yale Blvd., Dallas; $761,363.

Milam—Hwy. US 77; 0.517 mi.; F. M. Reeves & Sons, P. O. Box 972, Austin; $145,724.

Panola and Rusk—Hwy. St. 149 and Spur 152; 8.498 mi.; R. C. Buckner, P. O. Box 609, Jacksonville; $280,760.

BEAUMONT—Jefferson County, James A. Kirkland, Judge, let contract to Trotti & Thomson, Inc., Beaumont, for improvements on Groves St., 39th St., Beaumont St., McKingley St., North Ave., Hogaboom Rd., and Lombardy Dr.; $180,800.

COLORADO CITY—Texas Electric Service Co., Ft. Worth, let contract to Harry Campbell, 2854 Berry St., Ft. Worth, for Morgan Creek in Mitchell County, to generate electric power and furnish water for city; $525,277.

CORPUS CHRISTI—Nueces County let contract to Bauer & Smith Dredging Co., Port Lavaca, for Lexington Blvd. extension and Causeway across Laguna Madre; $1,248,607.

DALLAS—City received low bid from Austin Road Co., 1000 Singleton Blvd., for street improvements and storm sewers on Edgefield Ave. from Illinois to GC&SF R.R.; $112,044.

FORT WORTH—City received low bid from Texas Bitulithic Co., NW 4th St., for widening and paving Sylvania Ave. between N.E. 28th & E. 4th; $317,657.

GALVESTON—Galveston County let contract to Gulf Bitulithic Co., 2820 Polk Ave., Houston, for road work on community road in Hitchcock, Alta Loma and Algoa; $117,908.

HOUSTON—Harris County let contract to W. E. Worthen, 7102 Ave. N, for 7.9 mi. paving on Cypress Rd. and 1 bridge; $117,879.

MIDLAND—City let contract to Brown & Root, Inc., P. O. Box 3, Houston, for paving streets; $399,849.

VIRGINIA

FLOYD, PATRICK AND CARROLL COUNTIES—Public Roads Administration received low bid from Adams & Tate Construction Co., 2725 Roanoke Ave., Norwich, Roanoke, for Project I. S. S-TIO-U-2 V6, Boue Ridge Parkway; $357,796.

INDUSTRIAL

Proposed Stage

ALABAMA

United Gas Co. plans $30,000,000 expansion and improvement program in Texas, Louisiana, Mississippi, Oklahoma, Southern Alabama and Northwestern Florida.

ARKANSAS

TUSCALOOSA—Logan Long Co., Chicago, Ill., acquired tract west of Tuscaloosa for asphalt roofing materials plant; $750,000.

BERRYVILLE—Carroll Electric Cooperative Corp. has REA loan of $900,000 for improvements.

DISTRICT OF COLUMBIA

WASHINGTON—Potomac Electric Power Co. will issue about $7,000,000 more in common stock; Public Utilities Commission will hold public hearing on previous proposed $37,000,000 debentures issue.

FLORIDA

MIAMI—Florida Power and Light Co. plans plant on St. Johns River in area of Green Cove Springs, Clay County; $10,000,000.

GEORGIA

DALTON—North Georgia Electric Membership Corp. has REA loan, $460,000, for improvements and 245 miles lines, to serve 880 consumers.

MACON—Bibb Manufacturing Co. plans office building adjoining No. 2 unit; $300,000.

MACON—Bibb Manufacturing Co. plans installation of air conditioning in Payne Mill, $300,000.

SAVANNAH—Savannah Electric and Power Co. plans $600,000 construction program.

KENTUCKY

CAMPBELLSVILLE—Taylor County Rural Electric Cooperative Corp. has REA loan, $640,000, for 267 miles line.

HAZARD—East Kentucky Coal Cleaning Corp. plans tipple and coal cleaning plant for truck mines near Hazard; $100,000.

LOUISIANA

HOUMA—George Bronsard, Inc., 510 Lafayette St., purchased site for erection of automobile agency; $100,000.

LAKE CHARLES—Citizens Publishing Co., Inc., incorporated with Willis P. Weber as Pres., plans establishment of a new morning and Sunday newspaper in Southwestern Louisiana; authorized capital stock of $500,000.

LINCOLN PARISH—Arkansas-Louisiana Gas Co. plans $3,000,000 gas distillate plant, north of Ruston.

MARYLAND

LAUREL—Maryland Jockey Club seeking authorization of Maryland Racing Commission to transfer to Laurel a fund of $548,975 which was held for improvements at Pimlico Race Track.

MISSISSIPPI

Mississippi Chemical Corp., Jackson, has several sites under consideration for erection of $13,000,000 nitrogen fertilizer plant.

BATESVILLE—Tallahatchie Valley Electric Power Association has REA loan, $750,000, for 295 miles line.

CLARKSDALE—Southern Bell Telephone Co. plans exchange; $1,500,000.

JACKSON—Jones County Electric Power Association plans 233 miles rural electric lines; $985,000.

NATCHEZ—International Paper Co. to break ground for $20,000,000 rayon pulp mill.

NATCHEZ—Mississippi Power and Light Co., Jackson, plans $8,000,000 generating plant.

OKLAHOMA

Cities Service Gas Co., Oklahoma City, seeks Federal Power Commission authorization to install additional compressor facilities, aggregating 4,790 horsepower on partially completed 400-mile natural gas pipeline which, when completed, will extend from Kansas-Hugoton Gas Field to Kansas City, Mo.; $1,214,000.

STILLWATER—Central Rural Electric Cooperative has REA loan, $825,000, for 344 miles line.

SOUTH CAROLINA

CHARLESTON—West Virginia Pulp and Paper Co. contemplates pulp plant; $9,500,000 probable cost.

MONCKS CORNER—Berkshire Woolen Mills Corp., Pittsfield, Mass., has leased old Army Depot warehouses and will start work immediately on factory.

NEWBERRY—Oakland Mills, a unit of Kendall Mills, to start work immediately on addition to plant; $1,500,000.

TENNESSEE

CHATTANOOGA—U. S. Pipe and Foundry Co., Burlington, N. J., will expend $300,000 on improvements during 1949 and 1950.

MILLINGTON—Memphis Light, Gas and Water Commission plans $552,933 sub-station.

TEXAS

DALLAS—Southern Express, Inc., plans warehouse, Irving Blvd.; $230,000.

HOUSTON—Port Commission has selected Nelson A. Davis Co., 343 S. Dearborn, Chicago, Ill., as Consit. Engrs. to prepare a preliminary design for $800,000 inbound bulk handling plant to be built on Houston Ship Channel.

HOUSTON—Oceanic Foods Co. plans fish cannery to can Tuna from the Pacific Ocean; $600,000.

HOUSTON—Stupp Brothers Bridge and Iron Works, St. Louis, Mo., contemplates a steel fabricating plant; $1,000,000.

HOUSTON—National Steel Products Co. plans $1,500,000 steel plant, Lockwood and Armour Drives.

VIRGINIA

DANVILLE—Inter-County Rural Electric Cooperative plans $510,000 expansion program.

PORTSMOUTH—E. Z. Thread Co. may construct a plant on a 50-acre plot in Alexander Park, a suburb of Portsmouth, $125,000, exclusive of equipment.

INDUSTRIAL
Contract Stage

ALABAMA

MONTGOMERY—Bear Brothers, 25 E. Jefferson, Montgomery, have contract at $121,000 for baseball grandstand.

TUSCALOOSA—Logan-Long Co., Chicago, Ill., let contract to Morgan Holloman Construction Co., Tuscaloosa, for asphalt roofing materials plant; $750,000.

ARKANSAS

Arkansas Power & Light Co. let contract to Southeast Utilities Service Co., Jackson, Tenn., and L. E. Meyers Co., Chicago, Ill., at approximately $1,300,000, for 60-mile transmission line from Cecil Lynch Plant, North Little Rock, to Wynne and Parkin, Ark.

FLORIDA

JACKSONVILLE—City Commissioners let contract to George D. Auchter Co., foot of East 36th St., at $2,488,800, for new city-owned electric plant; Cleveland Electric Co., Atlanta, Ga., awarded contract for equipment.

MIAMI—Master Freezer, Inc., 905 Brickell Ave., let contract to Witters Construction Co., 1454 N.W. 17th Ave., Miami, for one and two-story cold storage plant, 64 N.W. 19th St.; $400,000.

TAMPA—Tampa Electric Co. let contract to Stone and Webster Engineering Corp., foot of Hemlock Ave., for $570,000 addition to Hooker's Point power plant.

GEORGIA

ALMA—Satilla Rural Electric Membership Corp. let contract to Alrich Electric Construction Co., 630-11th St., Augusta, for 400 miles line to serve 116 members; cost $463,398.

KENTUCKY

OWENSBORO—Green River Rural Electric Cooperative Corp. received low bid at $401,232 from Griffin Electric Co., 225 St. Ann St., for about 325 miles line.

LOUISIANA

NEW ORLEANS—Times-Picayune Publishing Co. let contract to Chris Larsen Co., Maritime Bldg., New Orleans, at $214,912, for sixth floor addition to Times-Picayune building, 615 North St.

NEW ORLEANS—Holsum Bakeries, Inc., received low bid from Perrilliat-Rickey Construction Co., Inc., 1530 S. Rendon St., New Orleans, at $158,900, for alterations and additions to building, 4700 Howard Ave.

NORTH CAROLINA

CHARLOTTE—Southern Radio Corp. let contract to J. A. Jones Construction Co., 209 W. 4th, Charlotte, for headquarters building; $260,000.

ROCKY MOUNT—Local Government Commission sold $400,000 Electric Light System Bonds to Eastabrook and Co. and F. W. Craigie and Co.

SOUTH CAROLINA

ROCK HILL—Herald Publishing Co. let contract to Young Construction Co., Rock Hill, at $130,000, for newspaper building.

TENNESSEE

CLARKSVILLE—Cumberland Electric Membership Corp. let contract to Utilities Construction Co., 151-4th Ave., North, Nashville, at $493,687, for REA lines.

LAFAYETTE—Tri-County Electric Membership Cooperative let contract to L. O. Brayton and Co., P. O. Box 116, Dyersburg, for 319.24 miles line; $408,620.

OAK RIDGE—U. S. Atomic Energy Commission let contract to Maxon Construction Co., P. O. Box 327, Oak Ridge, for uranium plant; $70,0000,000.

Above—W. T. Potter, president and secretary of the Greenville, S. C., contracting firm of Potter and Shackelford, Inc., died early in March after an illness of some four months. He was long prominent in construction circles in the Carolinas. Last year he served the Carolina Branch of the Associated General Contractors as vice-president and was elected president for the current year, later resigning due to ill health. Mr. Potter was a director of the Peoples National Bank, Liberty Life Insurance Co., and had served as a member of the Greenville Board of School Trustees and Zoning Commission. He is survived by Mrs. Virginia Allen Potter, his wife, and Edmond Potter, his son; Mrs. Marian B. Crigler, his daughter, and Mrs. Florence Tuthill Potter, of Greenport, L. I., his mother.

TEXAS

AUSTIN—City, Guiton Morgan, City Mgr., let contract to General Electric Co., 1312 Live Oak, Houston, at $259,305, for three units of switch gear equipment.

BAYTOWN—Thad Felton let negotiated contract to Frank H. Berry, Inc., Baytown, for new Ford Agency Building, 600 block of West Texas Ave.; $150,000.

BEAUMONT—Gulf States Utilities Co. let contract to Stone & Webster Engineering Corp., Mellie Esperson Bldg., at $1,500,000, for service center.

BEAUMONT—Bethlehem Steel Co. let contract to Austin Bridge Co., 4720 Sycamore, Houston, at $320,000, for mooring pier.

BRYAN—City let contract to Thomas Bryan and Assocs., 620 M & M Bldg., Houston, at $477,199, for power plant.

GRAND SALINE—Morton Salt Co. let contract to H. K. Ferguson Co., 1054 M & M Bldg., Houston, for salt plant in Van Zandt County; $3,000,000.

HOUSTON—Floz-on Manufacturing Co. let contract to Austin Co., M & M Bldg., Houston, for engineering and construction of chemical plant, Industrial Road; $1,000,000.

HOUSTON—Houston Oil Field Material Co. received low combined bid from Hubbard Construction Co., 1507 Delano St., Houston, at $356,500, for three office and warehouse buildings and a car parking shed.

VELASCO—Austin Co., M & M Bldg., Houston, has contract for preservation of Government-owned magnesium metal production facilities; $1,143,000.

WEST VIRGINIA

CHARLESTON—Atlantic Greyhound Lines let contract to A. G. Higginbotham Construction Co., Charleston National Bank Bldg., for garage; $575,000.

Southern Construction Projects

PRIVATE BUILDING
Proposed Stage

ALABAMA

BIRMINGHAM — 76th Street Presbyterian Church plans campaign to raise funds for proposed new $125,000 sanctuary and educational building.

ARKANSAS

BLYTHEVILLE — First Baptist Church plans church, 8th and Walnut Sts.; $350,000.

DISTRICT OF COLUMBIA

WASHINGTON—First Baptist Church, 16th and O Sts., NW, will launch $600,000 drive for new sanctuary, educational plant, social hall and chapel.

FLORIDA

MIAMI—St. John's On the Lake Methodist Church plans $100,000 sanctuary.
MIAMI—Bernarr Macfadden plans $5,000,000 Cosmotarian Fellowship and Church.
MIAMI — Trinity Methodist Church plans educational building; $170,000.
ST. PETERSBURG — First Avenue Methodist Church has preliminary plans complete for church and chapel building; $600,000.
THOMASVILLE — Memorial Methodist Church plans $400,000 church.

GEORGIA

AUGUSTA—Blanchard and Calhoun plan $2,116,226 apartment project, Golf Park Apartments.

KENTUCKY

FORT KNOX—Midwest Mortgage Co., 2545 S. Third, Louisville, seeks approval of $8,100,000 loan to finance 1,000-unit housing project.
LOUISVILLE—Martin L. Adams and Sons plan $800,000 apartment house.
LOUISVILLE—Volunteers of America are conducting campaign to raise $150,000 for rehabilitation of building.
WHITESBURG—R. H. Hobbs Co. 5 & 10-Cent Store plans $150,000 building.

MARYLAND

Woodward & Lothrop, Washington, D. C., plan $2,200,000 store.
SALISBURY—Twilley Associates, Inc., has city authorization to construct 48-family apartment house project; $400,000.

MISSISSIPPI

NATCHEZ — First Baptist Church plans annex; $100,000.

MISSOURI

ST. LOUIS—St. Louis Real Estate Board plans remodeling building, 717-19 Chestnut, into headquarters; $100,000.
WEBSTER GROVES — Webster Groves Christian Church, Bompart and Tuxedo, plans church, chapel and Sunday School building; $300,000.

NORTH CAROLINA

CHARLOTTE—Wriston A. Thompson and Associates plan $3,500,000 apartment project on Wakefield Dr.
THOMASVILLE—Rev. Wilson O. Weldon, Memorial Methodist Church, has chosen Marvin W. Helms, Charlotte, Archt., to prepare plans and specifications for $400,000 building.
WILMINGTON — Hanover Crest Apartments plans $1,000,000 project, Wrightsville Beach Hwy.

OKLAHOMA

ENID—University Place Church of Christ plans church auditorium and educational building; $260,000.
OKLAHOMA CITY—Paul Taylor has plans in progress for Trinity Baptist Church educational building; $200,000.
TULSA—V. L. Mudd Construction Co. plans 75 residences between 45th St. and 45th Pl., Riverside Dr. and plot of land west of Peoria Ave.; $600,000.

SOUTH CAROLINA

CHARLESTON—J. C. Long and Associates plan $2,053,000, 14-story apartment house at Ashley Ave. and Broad St.

TENNESSEE

JACKSON — Harold Simpson has plans nearing completion for $250,000 to $300,000 shopping center, Highland Ave.
NASHVILLE—D. E. Ralls plans rebuilding store buildings, Trinity Lane at Jones Ave.; cost $100,000.
NASHVILLE—E. C. Armstead has plans complete for apartment house, 32 units, on Blair Blvd., between Hillside and Chesterfield Ave., S.; $200,000.
TRENTON — Bank of Commerce, Pres., plans rebuilding structure destroyed by fire; $100,000.

TEXAS

BRYAN—College Avenue Baptist Church Congregation plans building; $250,000.
FORT WORTH—Beverly Hills Development Co., P. D. Henry, Pres., plans community center, Beverly Hills Addition; $2,000,000.
HOUSTON—Martin Nadelman plans $2,000,000 housing project.
ODESSA—Odessa Civic Hotel Co. plans hotel; $1,000,000.
VICTORIA—St. Mary's Parish plans auditorium; $150,000.

VIRGINIA

ALEXANDRIA—Christ Episcopal Church plans drive to raise $192,000 for new memorial parish hall.
RICHMOND — St. Stephen's Episcopal Church, Westhampton, has drive underway to raise $175,000 for additions and alterations.

PRIVATE BUILDING
Contract Stage

ALABAMA

BIRMINGHAM — Lakeland Apartments, Inc., let contract to Realty Construction Co., 207 S. 18th St., Birmingham, for $400,000 project.
MONTGOMERY—Bear Brothers, 25 E. Jefferson, have contract for alterations and additions to Hill Building; $183,000.
BIRMINGHAM—Marbury and Boriss has construction underway on 90 residences, 68th St. and 6th Ave., North; $288,000.

FLORIDA

EL PORTAL—Rader Memorial Methodist Church received low bid, $262,100, from Hamilton Construction Co., 6900 NE 2nd Ave., Miami, for church, 8700 block NE 2nd Ave.
MIAMI—R & M Corp. let contract to Mark Construction Co. for $250,000 building for local offices of U. S. Immigration and Naturalization Service and FBI.
MIAMI BEACH—Mackle Co., Inc., 2818 SW 22nd St., Miami, has contract for hotel, 7390 Ocean Terr.; $200,000.
MIAMI SHORES—Shores Plaza, Inc., 9080 Biscayne Blvd., let contract to Griffin-Cartledge, 108 NE 109st St., for four apartment buildings; $230,000.
SURFSIDE—Colonial Realty Co., Inc., 400 Lincoln Road, Miami Beach, let contract to Kay Construction Co., 7504 Byron Ave., Miami Beach, for two apartment buildings; $140,000.

GEORGIA

ATLANTA—Trust Co. of Georgia let contract to Barge-Thompson Co., 136 Ellis St., for branch bank; $283,957.
AUGUSTA—Sherman & Hemstreet will build 352 apartment housing project, Wrightsboro Rd.; $1,825,472.

KENTUCKY

BOWLING GREEN—W. R. Smith and Son, Nashville, Ky., low bidder at $117,813 for home for aged.
LOUISVILLE—Martin L. Adams & Sons will build apartment hotel, Ormsby Ave.; $800,000.

LOUISIANA

SHREVEPORT — National Development Corp. let contract to Werner Co., 1320 Pierre Ave., at $500,000, for office building.
TALLULAH—Baptist Church received low bid from Edward H. Eiland, P. O. Box 790, at $192,000, for church.

MARYLAND

BALTIMORE — Commonwealth Construction Co., 5314 Reisterstown Rd., has plans complete for 42 row-type dwellings; $416,000.
BALTIMORE—Lawrence A. Menefee, 347 N. Charles St., Archts., plans 58 residences for Fenwick Corp., 11 E. Fayette St.; $464,000.
BALTIMORE—Monumental Homes Corp., 205 Davis St., let contract to Century Construction Co., Inc., 205 Davis St., for 40 residences; $280,000.
BALTIMORE COUNTY—Macht Co., 11 E. Fayette St., Baltimore, let contract to Welsh Homes, Inc., 11 E. Fayette St., for 13 residences, Gaywood Development; $104,000.
BALTIMORE COUNTY — Young Men's Christian Association, 24 W. Franklin St., received low bid, $545,000, from Redding & Co., Inc., 26 W. 25th St., for YMCA building, Dunmanway.
BALTIMORE COUNTY—Roosevelt Building Corp., 731 Patapsco Ave., plans four apartment buildings, Malden Choice Lane, Catonsville; $247,636; owner builds.
CAMP DETRICK—Corps of Engineers received low bid, $293,328, from B. and J. Construction Co., Washington, D. C., for 24 two-story house units.

MISSISSIPPI

COLUMBIA—First Baptist Church received low bid from Dye and Mullings, $119,800, for educational building.
NEWTON — Newton Baptist Church received low bid, $138,219, from Central Construction Co., Philadelphia, for church.

MISSOURI

ST. LOUIS—St. Mary Magdalen Parish let contract to Kloster Co., 4607 Beck, for youth center, 4346 S. Kingshighway; $220,000.
ST. LOUIS—Federer Realty Co. has construction underway on $1,000,000 project of small residences, West Kingshighway Hills; Walter F. Bellmich, Inc., Contr.

NORTH CAROLINA

FAYETTEVILLE—Evans Furniture Co. received low bid from O. W. Godwin, Dunn, at $103,989, for store.

OKLAHOMA

TULSA—Morton Harrison let contract to W. E. Moore for apartment building, 18th St. and Boulder, to contain 100 units; $1,000,000.
TULSA—Chandler-Frates Co. will build six apartment buildings on Quaker Ave., $200,000; owner builds.

SOUTH CAROLINA

COLUMBIA—Main Street Methodist Church received low bids from Mechanic Contracting Co., Inc., 1325 Main, Columbia, for alterations and additions to church and Sunday school; $140,965.

TENNESSEE

NASHVILLE—Athens Homes, Inc., will build 152 residences in Miro Meadows Subdivision; $700,000.

TEXAS

AUSTIN—East Side Investment Co. received low bid from Rex D. Kitchens Construction Co., P. O. Box 756, at $803,323, for Commodore Perry Hotel.
AUSTIN—University Baptist Church, Gerald E. Williams, Director of Student Activities, let contract to J. M. Odom, P. O. Box 774, Austin, at $151,553, for student center.
BEDFORD—Variety Foundation of Texas, Variety Club Boys Ranch, let contract to Beveridge Construction Co., 6609 Calmont St., Fort Worth, at $151,314, for residence hall.
BEAUMONT—Oak Lane Corp., 122 Buie Bldg., will build 44-unit apartment project; $500,000.
CORPUS CHRISTI—First Baptist Church let contract to E. Eisenhauer, 1124 N. Tancahua, at $334,856, for church, Ocean Dr.
DEL RIO—John M. Rowland and Sons, 712 S. Main St., received low bid, $135,963, from Glen C. Trainham for store and cleaning plant.
FORT WORTH—Mrs. C. O. Edwards let contract to Ralph Bower, Forest Hill, Fort Worth, for residence, Westover Hill, 39 Valley Ridge Rd.; $100,000.
GALVESTON—W. R. Reid, Houston, will build $500,000 apartment-housing project.
HOUSTON—Southway Manor Corp. will erect apartment project at Southway and Fairway Sts., near Greenway Addition; $1,500,000.
HOUSTON—San Jacinto Gardens Co., 6107 LaSallette Dr., will erect apartment; $500,000.
HOUSTON—Southern Builders, 1200 Givens St., will erect 226 residences, Greenway Park; $750,000.
HOUSTON—Leon Green will build $350,000 tourist court, DuBarry Motel, at Old Spanish Trail and Almeda.
HOUSTON—Cotton Exchange Building, 1300 Prairie Ave., let contract to Tellepsen Construction Co., 1710 Telephone Rd., for remodeling; $500,000.
HOUSTON—Norfolk Construction Co., 2240 Norfolk, will build seven apartment buildings; $175,000.
KINGSVILLE — Hall Industries, Rialto

Theatre Bldg., Beeville, let contract to J. W. Bateson Construciton Co., P. O. Box 1931, San Antonio, at $177,450, for theatre.

PASADENA—Deep Water Sub-Division, Maurice Krull, 3438 Arbor, Houston, will build 700 residences and shopping center; $5,000,000.

SAN ANGELO—Concho Theatres, Inc., let contract to Evans and Taylor, P. O. Box 1222, at $114,000, for theatre and drug store, 1938-40 Sherwood Way.

Above—Air-conditioned administration building at the new $14,500,000 electrochemical chlorine-caustic soda plant of Diamond Alkali Co., Houston.

PUBLIC BUILDING
Proposed Stage

DISTRICT OF COLUMBIA

WASHINGTON—Hobart M. Corning, School Supt., plans proposed new Springarn High School for Negroes; $5,600,000.

FLORIDA

GAINESVILLE—State Board of Control, Tallahassee, plans engineering building for University of Florida; $4,000,000.

VERO BEACH—Indian River County Hospital Association, Inc., acquired site for 36-bed hospital; $473,760.

GEORGIA

ATLANTA—City plans addition to and renovation of Carnegie Library; $500,000.

KENTUCKY

FRANKFORT—State Building Commission plans office building of Pentagon type; $4,000,000.

LOUISVILLE—Board of Education plans $1,500,000 MacArthur Elementary School; also $1,500,000 Hazelwood Elementary School.

LOUISVILLE—Board of Education plans prepared by Thomas J. Nolan & Sons, Kentucky Home Life Bldg., Louisville, Archts., for Central High School for Negroes; $4,000,000.

LOUISVILLE—Board of Education plans expenditure of $623,000 for school repair work.

MIDDLETOWN—Jefferson County Board of Education plans $1,000,000 high school.

LOUISIANA

JENNINGS—Jeff Davis Parish School Board will hold special bond election April 19 on $770,000 bonds for improvements.

LAKE CHARLES—Calcasieu Parish Police Jury plans Courthouse and Jail Building; $2,500,000.

NEW ORLEANS—Orleans Parish School Board plans new Gentilly School; $750,000.

NEW ORLEANS—Andry & Feitel, Carondelet Bldg., New Orleans, have plans for mental hospital, DePaul Sanitarium; $1,100,000.

RUSTON—Police Jury of Lincoln Parish plans new Lincoln Parish Courthouse; $500,000.

MARYLAND

Governor Preston W. Lane proposed a $16,373,000 bond issue to help finance a $39,912,300 construction program; of this amount the administration bond bill provides $5,061,500 for the University of Maryland; $2,396,000 would be for the four State Teachers Colleges; $1,190,811 for the four training schools; $1,669,170 for Morgan State College; $1,592,262 for the Department of Correction, etc.

ANNAPOLIS—Maryland House of Delegates passed bill authorizing St. Mary's County Commissioners to issue $750,000 bonds for school improvements.

CARDEROCK—Senator Millard Tydings, Chmn. of Senate Armed Services Committee, introduced a bill which would provide for construction of a $6,000,000 supersonic wind tunnel at David W. Taylor Model Basin, part of a $400,000,000 expansion of the Government's aircraft and ship testing laboratories; would also provide for establishment of an engineering development center and set up new plants at 13 universities.

MOUNT WILSON—Governor Preston W. Lane plans recommending to the Legislature the construction of a modern 300-bed hospital as part of improvements program for State tuberculosis sanatoria; $4,100,000.

ROCKVILLE—Silver Spring Hospital Association submitted proposal to Montgomery County Council to approve issuance of $1,500,000 bond issue for hospital.

MISSISSIPPI

BROOKHAVEN—Board of Trustees plans school building program; $500,000.

CARTHAGE—Board of Supervisors of Leake County plans hospital, containing 50 beds and addition to nurses dormitory; $700,000.

GREENVILLE—Board of Supervisors of Washington County plans hospital, 125 beds; $1,209,540.

GREENWOOD—Board of Supervisors of Greenwood-Leflore Counties, plans Greenwood-Leflore Hospital; $1,250,000.

GREENWOOD—Greenwood Separate School District approved $1,250,000 bond issue for new white elementary school, annex to east Greenwood School, and Negro elementary school, annex to present Negro school.

JACKSON—University of Mississippi plans new library building; $1,250,000.

MISSOURI

ST. LOUIS—Washington University plans dormitory at McKinley Ave. and east of Kingshighway; $1,500,000.

NORTH CAROLINA

RALEIGH—North Carolina State College plans $6,000,000 building program.

WINSTON-SALEM—Wake Forrest College plans six dormitories, four for men and two for women; $4,000,000.

SOUTH CAROLINA

COLUMBIA—State Legislature considering bill calling for expenditure of $5,000,000 for new State Prison.

SPARTANBURG—Spartanburg General Hospital, enlargement and modernization program; $1,300,000.

TENNESSEE

CLARKSVILLE—Montgomery County Board of Education plans $1,500,000 school building program.

JOHNSON CITY—Memorial Hospital, Inc., plans hospital; $1,000,000.

TEXAS

AUSTIN—University of Texas plans $10,000,000 school building program for ten new school buildings on the University Campus: Law school, $1,500,000; pharmacy, $1,250,000; one classroom building, $1,700,000; classroom building at $1,275,000; administration building, $1,500,000.

AUSTIN—Austin College plans $600,000 school program, including gymnasium, student union memorial building, health center building and home for president.

EL PASO—Providence Memorial Hospital plans 200-bed Memorial Hospital and Nurses' Home; $1,000,000.

FREEPORT—Brazosport Independent School District plans $1,500,000 high school.

HOUSTON—University of Houston plans library; $1,200,000.

HOUSTON—Methodist Hospital plans 300-bed general hospital; $4,000,000.

HOUSTON—Texas Medical Center plans medical building; $3,500,000.

HOUSTON—City plans tubercular hospital; $2,741,700.

KERMIT—Kermit Independent School District plans high school; $1,400,000 bond issue voted.

LaMARQUE—Galveston County plans hospital, west of LaMarque on Galveston-Houston Highway; $1,000,000.

LUBBOCK—Lubbock County plans Courthouse; $1,500,000.

PALESTINE—Anderson County plans hospital; $500,000.

SAN ANTONIO—Baptist Memorial Hospital, Board of Trustees, plans maternity hospital; $1,500,000.

TYLER—Smith County plans 150-bed general hospital; $1,500,000.

VIRGINIA

HARRISONBURG—Rockingham County School Board plans high school at Montevideo; $1,000,000.

LANGLEY FIELD—Senator Millard Tydings, Chmn. of Senate Armed Services Committee, introduced a bill which would authorize acquisition of an additional 500 acres and expansion of the Aeronautics Laboratory; $1,500,000.

ROANOKE—City approved $428,000 bond issue for central library.

ROANOKE—City approved $4,200,000 bond issue for new schools and improvements.

SALEM—City approved $225,000 bond issue for general improvement bonds.

PUBLIC BUILDING
Contract Stage

ALABAMA

BIRMINGHAM—City let contract to J. A. Jones Construction Co., Walton Bldg., Atlanta, Ga., at $1,582,000, for new City Hall.

GADSDEN—City Board of Education received low bid from Home Building Co., Gadsden, for alterations and additions to Walnut Park School; $212,477.

MONTGOMERY—Alabama State Building Commission let contract to J. A. Jones Construction Co., 309 Walton Bldg., Atlanta, Ga., at $1,560,000, for livestock coliseum building.

DISTRICT OF COLUMBIA

WASHINGTON—District Commissioners will soon let contract to Zerzel Construction Co., 1011-20th St., N.W., at $352,775, for new laboratory at Gallinger Hospital.

WASHINGTON—District Commissioners, 509 District Bldg., 14th St. and Penn. Ave., received low bid from John Tester & Son, Inc., 1020-22nd St., for new Stanton Elementary School, Alabama Ave. and Naylor Road; $619,207.

WASHINGTON—Public Buildings Administration let contract to John McShain, Inc., 17th & Spring Garden, Philadelphia, Pa., at $21,635,500, for General Accounting Office Building, G & H Sts., 4th & 5th Sts., N.W.

FLORIDA

HAINES CITY—Polk County Board of Public Instruction, Bartow, received low bid from Henry A. Ivey, Inc., Atlanta, for junior-senior high school; $325,895.

CLEARWATER—Pinellas County Commissioners let contract to Paul Smith Construction Co., 310 N. Rome Ave., Tampa, at $525,000 for County Jail.

GREEN COVE SPRINGS—Navy Department, Naval Base, S. C., let contract to Hillyer and Lovan, P. O. Box 361, Jacksonville, at $281,000, for moorings for AFDB-3 Drydock.

HOLLYWOOD—Church of the Little Flower Parish, 1843 Pierce St., let contract to Brennan Construction Co., 5600 NW 7th Ave., Miami, for school; $287,000.

KENTUCKY

OWENSBORO—Owensboro-Daviess County Hospital Association received low bid from Whittenberg Construction Co., 2214 S. Floyd, Louisville, at $566,800, for 62-bed addition.

RUSSELLVILLE—Logan County let contract to Leo C. Miller, 333 E. Bloom, Louisville, at $261,000, for County Hospital.

LOUISIANA

NEW ORLEANS—St. Louis Cathedral let contract to Perrilliat-Rickey Construction Co., 1530 S. Rendon St., New Orleans, for convent and parochial school; $365,000.

NEW ORLEANS—City sold $500,000 civic center bond issue to Lehman Brothers & Associates.

(Continued on page 42)

Southern Construction Projects

PUBLIC BUILDING
Contract Stage

(Continued from page 41)

MARYLAND

BALTIMORE—Baltimore Museum of Art let contract to Morrow Brothers, Inc., 2315 N. Charles St., at $229,250, for Young People's Art Center.

BALTIMORE—Board of Estimates let contract to Frank Angelozzi Construction Co., 123 S. High St., for Jones Falls Sewage Pumping Station; $509,978; Contract No. 379.

WHITE OAK—Navy Department, U.S. Bureau of Yards and Docks, Washington, D. C., received only bid from Allis-Chalmers Manufacturing Co., Milwaukee, Wisc., at $304,653, for overhauling compressors and providing auxiliary equipment and switchgear, supersonic wind tunnel, Naval Ordnance Laboratory.

MISSISSIPPI

RULEVILLE—Board of Supervisors of Sunflower County let contract to Starr Construction Co., May Bldg., Greenville, for hospital; $387,000.

STATE COLLEGE—State Building Commission, New Capitol Bldg., Jackson, let contract to J. A. Jones Construction Co., 209 W. 4th, Jackson, for library, Mississippi State College; $508,700.

WOODVILLE—Board of Trustees of Woodville Consolidated School District received low bid from I. W. Havard, Cusen, for high school and elementary school, gymnasium and alterations and repairs to Academic Building; $237,000.

MISSOURI

CAPE GIRARDEAU—Board of Regents, Southeast Missouri State College, let contract to L & R Construction Co., 6999 Latta Place, St. Louis, for physical education and health building; $369,955.

KENNETT—Dunklin County Commissioners received low bid from Ray Dilschneider, Inc., 8600 Manchester Road, St. Louis, for hospital; $760,300.

NORTH CAROLINA

CHARLOTTE—Board of School Commissioners let contract to Laxton Construction Co., 127 Brevard Court, Charlotte, for Chantilly Elementary School; $285,501.

CLINTON—Board of Supervisors of Sampson County received low bid from Rogers Construction Co., Smithfield, at $627,500, for 100-bed hospital.

KINSTON—Caswell Training School let contract to R. N. Rouse & Co., Goldsboro, for five buildings; $218,335.

LENOIR—Caldwell Memorial Hospital, Inc., received low bid from McDevitt & Street Co., Builders Bldg., Charlotte, for 100-bed hospital; $618,000.

RALEIGH—Board of Commissioners of Wake County let contract to Strong & Harmon, Raleigh, for Wake County Office Building; $262,999.

OKLAHOMA

OKLAHOMA CITY—Board of Education received low bid from Builders Construction Co., for Southeast Junior-Senior High School; $464,500.

NORMAN—Central States Hospital, State Board of Affairs, Oklahoma City, received low bid from Cowen Construction Co., Shawnee, for addition to Hope Hall and rehabilitation of present hospital; $248,670.

TENNESSEE

MEMPHIS—City sold $4,561,000 general city government improvement bonds to Chemical Bank & Trust Co., New York; include $500,000 for general city improvements; $1,346,000 for street improvements and grade separations; $335,000 for harbor purposes; $400,000 for park improvements; $890,000 for John Gaston Hospital improvements now underway; $300,000 for airport improvements, and $500,000 for new construction for Police and Fire Departments.

MEMPHIS—City sold $1,000,000 school bond issue to Chemical Bank & Trust Co. of New York.

NASHVILLE—Federal Works Agency, Public Buildings Administration, Washington, D. C., received low bid from Beers Construction Co., 70 Ellis St., N.E., Atlanta, Ga., at $4,504,000, for Federal Office Building.

NASHVILLE—Mid-State Baptist Hospital let contract to Oman Construction Co., Acklen Park, Nashville, for hospital; $1,000,000.

OAK RIDGE—U. S. Atomic Energy Commission let contract to John A. Johnson & Sons, Inc., 270 41st St., Brooklyn, N. Y., at $517,000, for seven dormitories, bathhouse and conversion of building No. 1855-T to cafeteria.

SPRINGFIELD—Robertson County let contract to Nile E. Yearwood, David Lipscomb Campus, Nashville, for high school; $500,780.

TEXAS

Brooks County Independent School District let contract to Arthur Brothers, 813 S. 6th St., Kingsville, for eight elementary schools at Encino and Falfurrias; $280,302.

ANGLETON—Angleton Independent School District let contract to Logan P. Marshall, 4009 Center Street, Houston, for one-story school; $209,500.

AUSTIN—Austin Independent School District let contract to J. M. Odom, P. O. Box 774, Austin, for Blue Bonnet Elementary School; $254,920.

AUSTIN—Austin College let contract to Farnsworth and Chambers Co., Inc., for gymnasium and student building; $600,000.

BONHAM—Veterans Administration, c/o Office of District Engineer, Tulsa, Okla., let contract to J. J. Fritch, 6834 Harry Hines Blvd., Dallas, at $4,325,000, for 300-bed Domiciliary and a 50-bed General Medical Hospital.

DAINGERFIELD—Navy Department has selected Bryan, Cooper & Assocs., comprising Thomas Bryan & Assocs., Inc., M & M Bldg., Houston, and Dale S. Cooper & Assocs., 420 Sul Ross, Houston, as engineers and contractors for $1,000,000 research laboratory building.

DALLAS—Dallas Independent School District let contract to J. W. Bateson Construction Co., Irwin-Keasler Bldg., Dallas, for alterations and additions to Leila P. Coward Elementary School; $474,580.

DENTON—City-County received low bid from Carpenter Brothers, 1335 Plowman St., Dallas, at $509,750, for Flow Memorial Hospital.

FORT WORTH—Fort Worth Independent School District let contract to McCann Construction Co., 1806 E. Lancaster Street, Fort Worth, for addition and alterations to W. J. Turner School; $231,132.

HOUSTON—Houston Independent School District let contract to Farnsworth & Chambers Co., Inc., for new Wheatley Negro High School; $1,820,772.

HOUSTON—Houston Independent School District received low bid from I. G. Audish, 1911 Kolfahl Street, Houston, for elementary school; $477,760.

PANHANDLE—Carson County received low bid from Neil Singleton, 514 N. Fillmore St., Amarillo, at $555,875, for Courthouse and Jail.

PORT ARTHUR—Port Arthur Independent School District let contract to Robert E. McKee, P. O. Box 2848, Dallas, for additions to Tyrrell School and Stephen F. Austin High School; $1,293,000.

SAN BENITO—San Benito Independent School District let contract to R. E. Smith, Harlingen, for San Benito School; $205,000.

VICTORIA—Sister of the Incarnate Word let contract to Urban Construction Co., Victoria, for school; $450,000.

VIRGINIA

ALEXANDRIA—Board of Education let contract to Eugene Simpson & Brothers, 2 W. Walnut, Alexandria, for Charles Barrett School; $393,341.

BURKEVILLE—Piedmont Sanatorium let contract to Virginia Engineering Co., Melson Bldg., Newport News, for additions to hospital and nurses' home; $1,392,000.

CHARLOTTESVILLE—University of Virginia let contract to Harry B. Graham, Charlottesville, for two wings on school's law building; $215,266.

FRONT ROYAL—Warren County let contract to Wise Contracting Co., 8th & Grace Sts., Richmond, for Warren Memorial Hospital; $621,450.

HARRISONBURG—Rockingham Memorial Hospital let contract to Nielsen Construction Co., Harrisonburg, for Memorial Hospital; $1,187,277.

LEESBURG—Loudoun County received low bid from W. N. Hall & Son, Middleburg, Va., for alterations and additions to Loudoun County Hospital; $397,126.

PETERSBURG—Virginia State College let contract to R. H. Wattinger, Exchange Bldg., Richmond, for infirmary building; $306,500.

N. C. Engineer Society Roster Holds 1,134

The North Carolina Society of Engineers, headed by T. C. Heyward, district manager of Combustion Engineering Co., Inc., Charlotte, has 1,134 members largely from the founder societies such as civil, electrical, mechanical, chemical and mining fields. H. D. Jones, bituminous highway engineer of the Barrett division of A. C. & D. Corp., Graham, N. C., is vice president, and Leroy M. Keever, electrical engineer of the William C. Olsen engineering organization, Raleigh, is secretary-treasurer.

The Society's Board of Directors consists of the following: District No. 1, Sam M. Wilson, of Fayetteville, and H. M. von Oesen, of Wilmington; District No. 2, F. B. Wheeler, of Raleigh, and Hal S. Crain, of Durham; District No. 3, W. F. Hymbert, of Spray, and E. F. Lewis, of Greensboro; District No. 4, John R. Purser, of Charlotte, and Julian B. Stepp, of Asheville. R. P. Reece, of Winston-Salem, is junior past president.

Several noteworthy accomplishments have resulted from the Society's work in the past few years. One is the recommendation of desirable legislation for registration laws. Another is the preparation of data preliminary to recommendation that the North Carolina General Assembly provide the funds for a topographical map of the entire state. The aims of the Society are well summarized in one paragraph of its constitution, which reads:

"The objects of this Society are to promote the social, economic, and technical interests of the engineering profession, to foster better standards of engineer ethics, to disseminate engineering knowledge, to secure efficient service for the public, and to safeguard and protect the public from incompetency in all lines of engineering work, to assume an active interest in legislation and other movements having for their aim the improvement of professional standards, to organize and perpetuate local chapters of engineers throughout the State, and provide for their cooperation and coordination."

Sloan Heads Carolinas A. G. C. Branch

E. D. Sloan, president and treasurer of Sloan Construction Co., of Greenville, S. C., has been elected president of the Carolinas Branch of the Associated General Contractors. The election followed the resignation of W. T. Potter, who relinquished the position due to ill health after being elected at the fall convention. W. L. G. Mackenzie, president of the Fiske-Carter Construction Co., Spartanburg, was unanimously elected to serve as a director to succeed Mr. Sloan. The Carolinas Branch was the recipient of the Cashman membership trophy, an award made by the national A.G.C. for membership maintenance and gains.

Equipment and Material Makers' News

Allis-Chalmers Report Shows $15,441,523 Profit

The Allis-Chalmers Manufacturing Co., Milwaukee, Wisc., in the annual report to stockholders disclosed recently a profit for the year ended December 31, 1948, of $15,441,523 as compared with a profit of $5,422,308 for the previous year.

The profit is equal to $5.67 a common share after preferred dividends of $1,168,001. This compared to $1.69 a common share, after preferred dividends, in 1947 when production at the West Allis Works was limited by a strike during the first three months.

Walter Geist, Allis-Chalmers president, said in the annual statement to stockholders that the firm's sales billed for 1948, "our first full year of uninterrupted production since World War II," reached a peacetime high of $328,101,328. The sales billed during 1947 were $211,949,880.

"The record level of our 1948 operations," added Mr. Geist, "was the result of a large backlog of orders, continued strong demand for a major portion of the company's products . . . and the effect of inflation in higher cost and selling prices."

He also paid tribute to "the splendid teamwork and cooperation at every level" during the year.

The backlog of orders decreased from $169,553,221 on January 1, to $148,278,465 on December 31, 1948. The backlog of orders applies only to the products of the general machinery division since the sales of the tractor division are not booked until shipment.

The division of the 1948 billings and other income is:

Materials, $164,013,785 or 49.8 percent; wages and salaries, $105,125,075 or 32.2 per cent; operating expenses, $28,376,062 or 8.6 percent; all taxes, $15,563,185 or 4.7 percent; retained for working capital, $10,248,778 or 3.1 percent; and dividends, $5,192,745 or 1.6 percent.

Finance Subsidiary Formed by International Harvester

Organization of a finance company, to be known as the International Harvester Credit Corp., has been announced by the International Harvester Co. It will be a wholly owned subsidiary of the International Harvester Company, and its purpose will be to finance domestic notes receivable of the International Harvester Co. for which there is no other source of financing available.

In its 1948 annual report, issued recently, the company said it was giving consideration to the establishment of a finance company to assist in the financing of its time sales. In announcing the organization of the new subsidiary finance company, International Harvester's statement said that the recent growth of credit sales shows that the time is at hand when Harvester needs new credit financing to supplement the financing of its sales by banks and other financial institutions.

The company emphasized, however, as it did in its annual report, that banks and other financial agencies will continue to be the principal source for financing of the company's time sales. The company said it is confident that the many thousands of banks and other financial institutions all over the country will continue their active interest in the financing of the time sales of the company's products.

Establishment of the new finance company has been approved by Harvester's board of directors, and a corporate charter will be applied for shortly. International Harvester will pay $10,000,000 of capital into the new finance company initially. The finance company will then add to its working funds by borrowings from banks, supplementing the parent company's $10,000,000 of capital.

Concrete Drill Bits

The Rotary Concrete Drill Co., 650 S. Arroyo Parkway, Pasadena 2, Calif., announces concrete drill bits ranging in size from ¼ to 2 inches, the smaller sizes sometimes being put out on free trial as demonstrators. Such was the case with a demonstration model ⅞-inch RCD bit sent to Edward F. Zenis, domestic and industrial supplier, in Spokane, Wash. This single drill bit was widely used by contractors in the Spokane and Seattle areas for over eight months. The last contractor using the RCD bit drilled more than 400 holes with it. When finally returned the bit was still usable although it had never been resharpened, says the maker.

Kwik-Mix Tower Loader

Kwik-Mix Tower Loader

Development of a special tower loader attachment for discharging concrete batches to forms above ground level or into trucks has been announced by Kwik-Mix Co., of Port Washington, Wis. The tower device can be fitted to either the model 11-S or 16-S mixers. Kwik-Mix is a subsidiary of the Koehring Co.

The new tower loader is said to be an efficient answer to the contractors problem of loading trucks and hoppers from a ground level mixer. Maximum discharge height is 9 foot-2 inches. The bucket handles a full batch directly from the discharge chute of the portable concrete mixer. Discharge at top of tower is completely automatic. Bucket travel and discharge is completed during the time the following batch is being mixed in the mixer drum.

To Distribute Rex Products

Chain Belt Co., of Milwaukee, announces that the Georgia Supply Company of Savannah, Ga., for many years a distributor of Rex and Baldwin-Rex chain and power transmission machinery, is now a distributor for the merchandise products of the Conveyor & Process Equipment division. These products include Rex flat spray nozzles; Rex belt conveyor idlers; Rex trippers and other conveyor accessories.

Chain Belt Co. also manufactures Rex bucket elevators, and apron conveyors; Rex sanitation and water treatment equipment and Rex food processing machinery.

Flex-Plane Machine

A machine that mechanically installs dowels and tie bars in concrete pavements, thus eliminating expensive holding devices, has been announced by the Flex-Plane Co., Warren, Ohio. The installer, available for rental or sale, vibrates bars through the finished surface to their exact position and alignment within the slab.

Core tests by state highway engineers have proved, it is said, that the machine "spots" bars in better alignment than any method used previously. Reductions in cost are effected [illegible] by elimination of expensive dowel-holding devices. There is also less labor and miscellaneous expenses connected with the operation of this machine.

The machine is usually placed on the forms behind the finishing machine. A gas electric unit, with hydraulic lift controls, the machine more than keeps up with the fastest paver operation. On the job time studies revealed the machine installs dowels and tie bars in 30 seconds.

Flex-Plane Mechanical Dowell Installer.

Portable Aggregate Batcher Described by Heltzel

A new 12 page bulletin (C-34-A) on portable aggregate batching plants for road builders has just been announced by Heltzel Steel Form and Iron Co., of Warren, Ohio.

Heltzel portable Type 1 Bins, ranging in capacity from 52-72-85-100 tons, are thoroughly described in the new 3-color bulletin.

Batchers for these bins include the 1½ cubic yard Universal batcher for both batch truck and truck mixer operations; the 2 cubic yard truck mixer batcher; and 2½ cubic yard dual aggregate batcher for batch truck operations. The dual aggregate batcher will simultaneously load two compartments of a batch truck.

Foundation and erection details and complete specifications are included in the bulletin. In addition, various arrangements for loading the bins by clam shell, ramp or conveyor are pictured. Special emphasis is placed on the compact manner in which these plants can be shipped and handled; and their facilities for erection.

U. S. Rubber Earnings $20,141,585

Net 1948 earnings of United States Rubber Co. were $20,141,585 after taxes and all charges, equivalent to 3.5 per cent on sales and $8.48 a share on the common stock, compared with $21,753,317 or 3.7 per cent of sales and $9.39 a share in 1947.

Consolidated net sales were $572,024,065, a drop of 1.5 per cent from the all-time peak of $580,968,091 reached in 1947. The decrease resulted from lower sales of replacement tires which had been in abnormal demand in the previous year as a result of the accumulated war shortage. Sales of all other major products increased in 1948.

Due to improved operating efficiency, profit from the manufacture and sale of products in 1948 rose to $37,534,069, an increase of 4.4 per cent over the previous year, when operating profit was $35,953,363. This advantage was more than offset by a $758,279 loss resulting from the write-down to market of natural rubber inventories, an $862,223 loss caused by devaluation of currency in certain Latin American countries, and the setting aside of $298,582 in profits earned in foreign countries which were not remitted to the United States due to exchange restrictions.

Hewitt-Robins Net Put at $737,767

Hewitt-Robins Inc., New York, reported 1948 net income after all charges of $737,767, equal to $2.65 per share of capital stock outstanding, as compared with $1,223,618, or $4.39 per share in 1947. Net sales for the year ended December 31, 1948 totaled $19,623,062, as compared to $21,629,553 for 1947.

Thomas Robins, Jr., president, said in the annual report to stockholders that the principal reason why 1948 sales and earnings were below the record year of 1947 was a protracted strike at the Buffalo plants which resulted in a net loss for the first quarter of 1948, and caused subsequent delays in re-establishing high level operations. Despite this setback the year 1948 stands as the second best year in Company history.

Sales and earnings for the fourth quarter of 1948 reached an all-time record high. Sales for the fourth quarter totaled $5,763,220, as compared to $5,558,046 for the same period of 1947. Net earnings for the fourth quarter 1948 were $347,580, compared to $296,750 for the same period of 1947. He also said that sales in 1948 were more than double the highest prewar year of 1941 and four times above 1940.

Hewitt-Robins' four operating divisions include Robins Conveyors, manufacturer of bulk material conveying equipment and vibrating machinery; Hewitt Rubber, which makes mechanical rubber goods, conveyor belting, hose and molded products; Hewitt Restfoam, manufacturer of comfort-cushioning materials for consumers' use, and Robins Engineers, designers and constructors of complete material handling systems.

Vandervoort, Vice President of Marlow Pumps

Election of Vincent Vandervoort as vice president of Marlow Pumps, Ridgewood, N. J., has been announced by A. S. Marlow, Jr., president of the company. A widely known New Jersey industrialist and banker, Mr. Vandervoort has been affiliated with the Marlow concern since 1947.

(More on page 44)

Equipment and Material Makers' News

93-M Ward-Leonard Shovel Added To Marion Line

Introduction of the Marion 93-M Ward-Leonard All-Electric shovel has been announced by Marion Power Shovel Co., of Marion, Ohio. The 93-M Ward-Leonard machine, carrying a $2\frac{1}{2}$ cubic yard dipper and 28 foot boom as standard equipment, the new machine is designed for heavy-duty, long-life service on a variety of excavating jobs in the coal, quarry,

Marion 93-M All-Electric Shovel.

metal mining and heavy construction industries. It is being presented as a "sister" shovel of the Marion 95-M diesel machine, which has gained wide use since its announcement to the trade approximately three years ago.

Smooth, easy, cushioned operation of the Marion 93-M Ward-Leonard shovel results from the fact that all motions are electrically controlled. The swing machinery is powered by a separate vertical motor. The hoist machinery is powered by a separate motor, first through a silent chain reduction to the intermediate shaft, and then through a single gear reduction to the drum shaft. A separate motor direct geared through an intermediate shaft to the shipper shaft supplies power for the crowd machinery.

The motor generator set on the Marion 93-M Ward-Leonard consists of an induction driving motor direct connected to three direct current generators in line, and an exciter, all mounted on a self-supporting base. Each generator is of the Ward-Leonard type designed for variable voltage control. The motors themselves are the latest mill type, 600-line, shunt wound, 230-volt, direct current, and possess exceptionally low armature inertia and high over-load capacity.

General Motors Report Reveals Record Output Last Year

A record peacetime physical volume of production was achieved by General Motors in 1948, C. E. Wilson, president, and Alfred P. Sloan, Jr., chairman of the board, stated in their annual report to almost 434,000 stockholders.

Net sales were $4,701,770,340 and net income was $440,447,724, equivalent, after deducting dividends on the preferred stocks, to $9.72 per share of common stock. While both sales and net income were at an all-time high in terms of dollars, net income represented a lower margin on sales than prewar 9.4 cents per dollar of sales in 1948 as against an average of 11.5 cents in 1936-1941.

Total taxes paid by GM in 1948 were $463,500,000, equivalent to about 10 cents for each dollar of sales. Payrolls amounted to $1,283,865,090 in 1948. For 1947, net sales totaled $3,815,150,163. Net income was $287,991,373. The amount earned on the common stock, after providing dividends on the preferred stocks, was equivalent to $6.24 per share of common stock.

In its financial review of 1948 the report stated:

"Prices of materials, wage rates and other business expenses have risen sharply since the war. As a result, GM manufacturing and distribution costs have increased. These higher costs have necessitated increased prices for GM products. However, GM prices continue to compare favorably with those of competitors. This is due not only to GM's efficiency as a manufacturer but also to the stabilizing influence of GM's long-term pricing policy.

"GM products represent outstanding values measured both in relation to the public's greater buying power and in terms of improved quality over the years. The combination of a higher level of prices, a substantial flow of production and a sustained demand for GM products resulted in record dollar sales in 1948."

New Terra Cobra Wagon

Production of the new Terra Cobra wagon model TC-W14 has been announced by Wooldridge Manufacturing Co., of Sunnyvale, Calif. Available complete with 200 horsepower Terra Cobra model TC tractor, or as wagon unit Model W14 only, the unit is designed for quick interchange with scraper unit on all models of Terra Cobra self-propelled scrapers.

With a heaped capacity of 20 cu. yds., and 14 cubic yards struck, the tapered bottomless hopper spot dumps to rear, or spreads to desired lift by moving back on roller tracks. Positive fore and aft motion of body is effected by air controlled cables reeved without reverse bends in such a manner as never to contact load. Cable is accessible at all times.

Hopper, which will pass rock up to 48 inches diameter, and stationary chassis bottom plate are of heavy abrasion resistant alloy steel. The hopper is ruggedly braced on all sides. Massive rear wheel brakes operate from two air reservoirs on wagon, and set automatically if air supply from tractor is interrupted.

Osgood, and General Appoint New Distributors

Osgood Company and General Excavator Co., both of Marion, Ohio, announce appointment of new distributors for their power shovels and material handling equipment, as follows:

Contractor's Service, Inc., of 317 W. Worthington Ave., Charlotte, N. C., has been appointed distributor in South Carolina. This organization has represented O-G in North Carolina for many years. They have ample service facilities and skilled service personnel. E. W. Hobbs, Jr., is president, K. O. Hobbs, vice-president and sales manager, and Mary W. Hobbs, treasurer.

Dulaney Service Co., of R. R. No. 1, Box 96, San Antonio 4, Tex., has been appointed distributor in Southern Texas. R. T. "Bob" Dulaney, and J. T. "Jim" Dulaney are the principals of the firm. They have an experienced staff of sales and service men, and excellent showrooms and service department.

Gardner-Denver Profit Amounts to $1,971,732

Gardner-Denver Co., of Quincy, Ill., announces that its net profit for 1948 after appropriating $200,000 for possible losses through price declines amounted to $1,971,732, compared with $1,967,917 for the previous year when $500,000 was set aside for possible inventory losses. Net profit on common stock amounted $2.86 in 1948, two cents less than in 1947, after preferred dividends and the loss reserve.

Net sales in 1948 amounted to $22,045,039, representing an increase of $1,033,779, or about five per cent over 1947. Moderate price increases on some products however, were not sufficient to offset higher wages and material costs. Hence, the gross profit was lower in 1948 than in the previous year. The lower gross profit resulted in a decrease of $313,684 in net profit on operations, before income taxes and inventory losses, as compared with 1947.

Regular preferred stock dividends declared during the year totaled $97,500, or $4.00 per share. The regular quarterly dividends of 35 cents a share were declared on common stock, and in addition, an extra of 30 cents a share on common stock was paid in December. Total common stock dividends were $1,115,283, or $1.70 per share, the same as in 1947.

Expenditures for fixed assets during 1948 totaled $1,198,324. Most of this figure was for new machine tools installed to replace worn equipment or to increase productive capacity. New buildings were constructed at Denver, Colo. and Quincy, Ill. Further alterations and improvements are in progress at the latter plant. These will substantially increase manufacturing space there. Fixed asset expenditures in 1949 will be about one-half of those for last year.

In his letter of submittal, Gardner-Denver president, Edgar F. Schaefer, said 1949 will probably be a year of good business for his company, but in some divisions it is unlikely that sales will be maintained at the 1948 level. "We think," he said, "the demand for our products in the oil fields, construction, railroad transportation, mining and general industry will continue satisfactory and that our plants will be kept busy in 1949."

BP-5 Bituminous Paver Shown in New Jaeger Catalog

Jaeger Machine Co., Columbus 16, Ohio, has issued a catalog (BP-9) covering its new Model BP-5 bituminous mixer. Described as "America's most modern paver," the mixer is adjustable while in motion to widths from 9 to 12 feet and is further adjustable for lesser widths down to 5 feet 8 inches.

Numerous advantages are cited by the manufacturer, including high frequency oscillating compaction and finishing controlled with tiltable screeds; 12-foot long straight-edge equalizing runners, plus hydraulic leveling pans; automatic, positive matching to level of adjacent course, curb or gutter.

Also stressed is the ability to pave flush to curb; a 6-ton hopper with dual conveyors to assure continuous operation; burnproof screed heating with hot air system for even surface finish; crawler traction to push fully loaded trucks; pointer steering; a design that placed traction and weight except screeds on subgrade or cured course, and capacity to lay up to 32 feet or more of 12-foot 6-inch mat per minute.

The machine has 12 forward and as many reverse speeds. Operating speeds range from 5 to 50 feet per minute; road speeds, 56 to 180 feet per minute, or equivalent to .64 to 2.04 miles per hour. Crawler traction is 7 feet long, with 10-inch wide treads. Power is by a 6-cylinder radiator cooled engine developing 37.5 horsepower at 1,600 revolutions per minute.

Weight of the BP-5 approximates 18,000 pounds. Overall dimensions are 9 feet $10\frac{1}{2}$ inches wide, 16 feet long and 7 feet 4 inches high.

Fisher Elected Head of Gar Wood

The board of directors has elected Edward F. Fisher president of Gar Wood Industries, Inc., Wayne, Mich.

Mr. Fisher comes to Gar Wood Industries after four years of retirement following a highly successful career in the automotive industry. The Fisher brothers, it will be recalled, founded Fisher Body, which is now a division of the General Motors Corp.

Mr. Fisher will head an organization made up of four Divisions located in Wayne, Mich.; Findlay, Ohio; Minneapolis, Minn., and Richmond, Calif., the products of which are hydraulic hoists, dump bodies, winches, cranes, load-packers, truck tanks, ditchers, spreaders, finegraders, power shovels, tractor equipment and road patrols. Distribution of these products is handled nationally by an organization of factory branches, distributors and dealers located in every principal city of the United States.

Gar Wood Industries has manufacturing plants in Wayne, Mich.; Highland Park, Mich.; Findlay, Ohio; Detroit, Mich.; Minneapolis, Minn., and Richmond, Calif.

Blaw-Knox Appoints Consultant

Blaw-Knox Co., Pittsburgh, Pa., has announced appointment of H. C. Peters as technical consultant of construction equipment of the Blaw-Knox Division.

An alumnus of Ohio Northern University with a degree in mechanical engineering, Mr. Peters has had 25 years experience in development and marketing of construction machinery. He supervised the field development of the front end charging type concrete mixers, now standard equipment on all large concrete projects. He also directed development of the inclined axis feed chute loading (high discharge) truck mixer and is the inventor of important features of this type truck mixer.

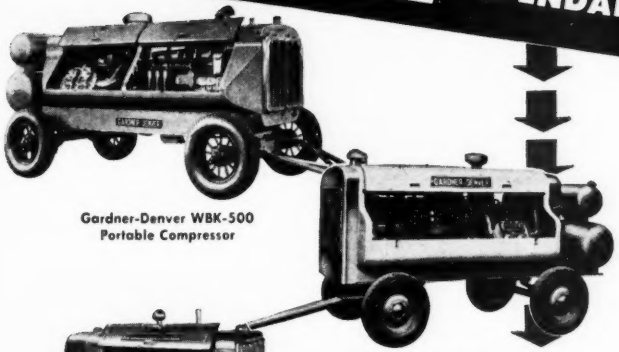
For 14 years he was employed in various sales and technical capacities by T. L. Smith Co. of Milwaukee, his last position being vice president in charge of engineering, development and patents. He served the Ransome Concrete Machinery Co., of Dunellen, N. J., for a number of years as branch and territory manager; and for a brief period was employed by Hunter Machinery Co., Milwaukee.

Quick Dry Metal Primer

Tremco Manufacturing Co., Cleveland, Ohio, announces a quick drying chromated metal primer that permits application of two coats of paint over metal in a single day. The priming coat dries to touch in 10 minutes and may be handled in 20 minutes. It can be recoated in 30 minutes to an hour, under average conditions of temperature and humidity, says the maker.

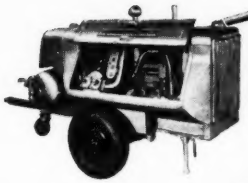
(More on page 46)

AN ALWAYS DEPENDABLE AIR SUPPLY . . .



Gardner-Denver WBK-500 Portable Compressor

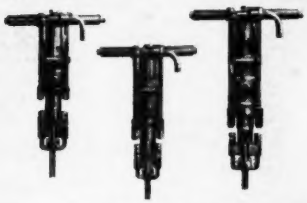
Gardner-Denver WHF-210 Portable Compressor



Gardner-Denver WHD-105 Portable Compressor

No matter where you send a Gardner-Denver Portable Compressor, you can be sure of a steady, uninterrupted air supply. For regardless of climate or altitude, the complete water jacketing of all cylinders "weather-conditions" them against over-heating — and from cold, unlubricated starts in sub-zero weather. For complete information, write Gardner-Denver Company, Quincy, Ill.

. . . FOR THE RIGHT AIR TOOLS



There's a Gardner-Denver Sinker that's "correct" in size and power for every type of ground. Shown here are the three most popular models: the high-speed S45 for secondary drilling or medium rock—the S55, most popular 55-pound sinker on the market—the S73, 67 pounds of speed and power for deep holes or the hardest formations.

Powerful Gardner-Denver B87 Paving Breaker has exclusive throttle safety latch — can be easily moved around the job without shutting off the air. Easily converted to a sheeting driver.

The feed of the new Gardner-Denver URM99 Wagon Drill is powered by a five-cylinder radial air motor. Designed for speedy, six-foot steel changes; carries a 3½ in. or 4 in. bore derrick drill. Your operator will like the ease of control.

The Gardner-Denver T23 Backfill Tamper is balanced for easy "walking" over the fill — has valve and exhaust that won't "freeze" in cold, damp weather — contains integral oil reservoir that assures complete lubrication.

Gardner-Denver Model 28 Clay Digger makes digging easy in clay or hardpan—can also be equipped with axe blade for trimming or cutting timber, or with moil point or chisel for light demolition work.

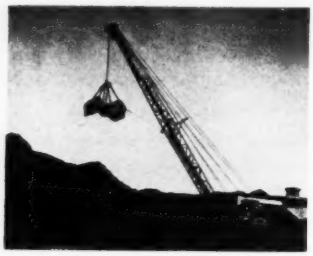
GARDNER-DENVER SINCE 1859

Equipment and Material Makers' News

New Osgood Excavator

Osgood Company, Marion, Ohio, announces its newly designed Type 72, a 1¼ cubic yard excavator and material handling machine. Three models are available: The Model 720, a shovel, dragline, clamshell, crane or hoe, with all front end attachments interchangeable; the Model 725 Mobilcrane, and the Model 727 dragline, clamshell or crane.

Redesigning of several of the features of the Type 71, predecessor to the Type 72, has resulted in making a good machine better. These



Osgood Model 727 Clamshell

improvements include a new type crawler unit, with each tread belt independently controlled, and the addition of the new Osgood type hook rollers. Heavy brackets supporting the rollers are mounted at each corner of the deck. Further stabilization of the superstructure on the crawlers is through a gudgeon which is part of the crawler base casting.

The Type 72 is equipped with the Osgood air control. Patented "Air-Cushion" Clutches apply metered air pressure to the working parts smoothly and evenly. The patented Osgood rotary coupling takes air pressure down through the vertical travel shaft to the steering clutches and brakes, without twisting or straining air pipes.

The Model 725 Mobilcrane is a one-man operated, one-engine machine, mounted on a rubber tired wheel mounted chassis. Independent travel unit provides one or two speeds forward and reverse. Osgood pioneered the Mobilcrane type of excavator and material handler, and is constantly improving its design. The Model 727 includes special features for lever and other dragline work as well as clamshell and crane service.

Cement Marketing Situation Discussed by Marquette

"It is inconceivable that the threats against competitive delivered pricing can survive an understanding of their consequences." That is the observation presented in the annual report of Marquette Cement Manufacturing Co., which contains a long discussion of the 1948 opinion rendered by the Supreme Court in the Federal Trade Commission case against the cement industry.

"Many manufacturers are convinced," the report states, "that the opinion declares it to be unlawful to make a practice of meeting the lower prices of competitors who have lower freight costs to the point of use. Most cement manufacturers hold to this view and therefore have adopted an f. o. b. plant price method of selling. Such a plant price must be uniform to comply with current pronouncements of the Trade Commission.

"Believing that the actual decision does not go that far, Marquette has not changed its selling and pricing policies. However, it is conceivable that the Federal Trade Commission will pursue its drive against delivered prices and that some future court decision may approve the Commission's interpretation of the law and deprive sellers of the right to compete by reducing delivered prices wherever necessary to meet lower prices or delivered costs. Any such decision would compel the partial or total relocation of plants and their employees in many industries."

To support its arguments, the Marquette report contains a map depicting its various plants, the areas where they must compete to get a sufficient volume of business to continue their home markets, the shipping capacity of all plants in the home markets and consumption in those home markets. In several instances, it is shown how there is not enough consumption in the home markets to permit efficient operation, a fact that necessitates entrance into more distant markets.

To get business in the distant markets, Marquette, or any other company, must meet competitor's delivered prices as cement is a standard product for which buyers usually have no preference from the viewpoint of quality. Even service usually has no influence against a lower price. Price and terms of sale are the controlling competitive factors. The difference in yield on that portion of volume sold in the more distant markets is more than offset by the decreased manufacturing cost per barrel, resulting from larger volume. Without the benefit of these distant sales, prices in the home markets would have to be higher.

Two New Diesel Trucks Shown by International Harvester

International Harvester has announced two new diesel-powered trucks, Models KBD-12 and KBRD-14 with GVW ratings of 31,500 pounds and 35,000 pounds, respectively. The KBD-12 is available in four wheelbases, 155, 161, 179 and 215 inches. The KBRD-14 model is available with 161, 179 and 215-inch wheelbase.

The new diesels are designed to meet the right requirements of heavy-duty operators requiring more power, improved performance, and maximum fuel economy. The KBD-12 fills the needs of over-the-road operators. It is suited to tractor-trailer work, and with the long 215-inch wheelbase and a long freight body, it is well adapted to city operation. The KBRD-14 is a heavy-duty truck for rugged off-highway service.

The power plant of these new models is the new HRB-600 Cummins Diesel which develops 165 maximum horsepower at 1800 r.p.m. The new engine has 5⅛-inch bore, 6-inch stroke, and a displacement of 743 cubic inches. Other engine features include new sleeves, pistons and head gaskets. An increased-flow lubricating system and continuous groove bearings are incorporated in this new engine.

A new and larger air cleaner is mounted on the outside at the right side of the cowl. A newly designed muffler, 5 feet long and 6 inches in diameter, is mounted upright outside the cab right rear corner. A 4-inch diameter exhaust stack is used. The clutch is a 15-inch single plate dry disc type.

Self-Priming Pumping Unit by Gardner-Denver

A new self priming pumping unit, designed for use where electric power or belting facilities are not available, has been announced by Gardner-Denver Co., Quincy, Ill. Known as the Type LDA, this packaged unit consists of a self-priming centrifugal pump close coupled to an air-cooled gasoline engine.

A double discharge volute is said to assure efficient priming, and a mechanical seal eliminates the conventional stuffing box and packing gland. Pump is equipped with an open type impeller for dewatering service where some small solids may be encountered. The manufacturer recommends the LDA packaged unit for any water application requiring capacities from 75 to 250 g.p.m. at a 110-foot head and the unit is said to be especially useful for flood protection during power failures.

Above—Gardner-Denver Type LDA Self-Priming Centrifugal Pump.

New Wayne Truck Crane

Model 44 Corsair Crane

A new ½ yard, 10-ton truck-mounted crane and excavator has been announced by the Wayne Crane division of the American Steel Dredge Company, Inc., Fort Wayne 1, Ind. Known as the Model 44 Corsair, the machine travels at truck speeds, swings at 5½ r.p.m. and is convertible to all crane and shovel attachments.

The six-wheel, tandem-type carrier, built especially for crane mounting, is of 16-inch—45 lb., steel "U" beam construction. Outrigger tubes are integral with frame—one pair ahead of front wheels and one pair behind rear wheels—to provide maximum rigidity and stability. Improved boom clearance and visibility are achieved by an offset, one-man cab and tapered frame ends.

Cummins Reveals High Speed Diesel Engine

Cummins Engine Co., Inc., of Columbus, Ind. last month held a press preview of its new and powerful high speed diesel engine, the Model NVH8-1200, which the company describes as furnishing more power than any high speed diesel now in production. The unit is a four-cycle, 12-cylinder, V-type, supercharged Cummins engine with a maximum rating of 550 horsepower at 2100 revolutions per minute.

A companion model to the NVH-1200, the new engine is designed for use in off-highway automotive units, other mobile mining and construction equipment, shovels, cranes and draglines, industrial locomotives and railcars, logging equipment, oil well drilling rigs, generator sets, and other portable and stationary applications. Marine models are to be available later.

As described by J. C. Miller, Jr., manager of research and refinement for the Cummins company, the engine has cylinders, pistons, valve gear and fuel system largely interchangeable with the current NH series engines. The 12 cylinders are combined in V form in a single cylinder block casting of high strength alloy iron designed for rigidity and to minimize foundry work.

The crankshaft is the conventional six-throw type, dynamically balanced and counter weighted for smooth operation and minimum load on the bears. Journals and pins are induction hardened to approximately 50 Rc. for maximum load capacity and life. A viscous friction damper is available to control torsional vibration and allow a wide speed range. Cylinders are staggered, the right being slightly ahead of the left bank.

Pistons are heat treated aluminum and embrace the combustion chamber shape. Piston skirts have an interrupted surface in a diamond pattern which provides lubrication to keep wear at a minimum. Piston rings are of Keystone section. The top one is chrome faced. Valve and injectors are in the cylinder head and are actuated through rocker arms from twin camshafts. The pumps are driven from the gear train driving the camshafts.

The fuel system is the one developed by Cummins and used for a number of years. Two pumps, each serving six cylinders, are driven together but are timed to the two banks. Speed is controlled manually, but is maintained at idle by a low speed governor and at maximum speed range by a high speed governor. The engine is further protected by an overspeed trip and by the built-in characteristics of the fuel pump.

(More on page 48)

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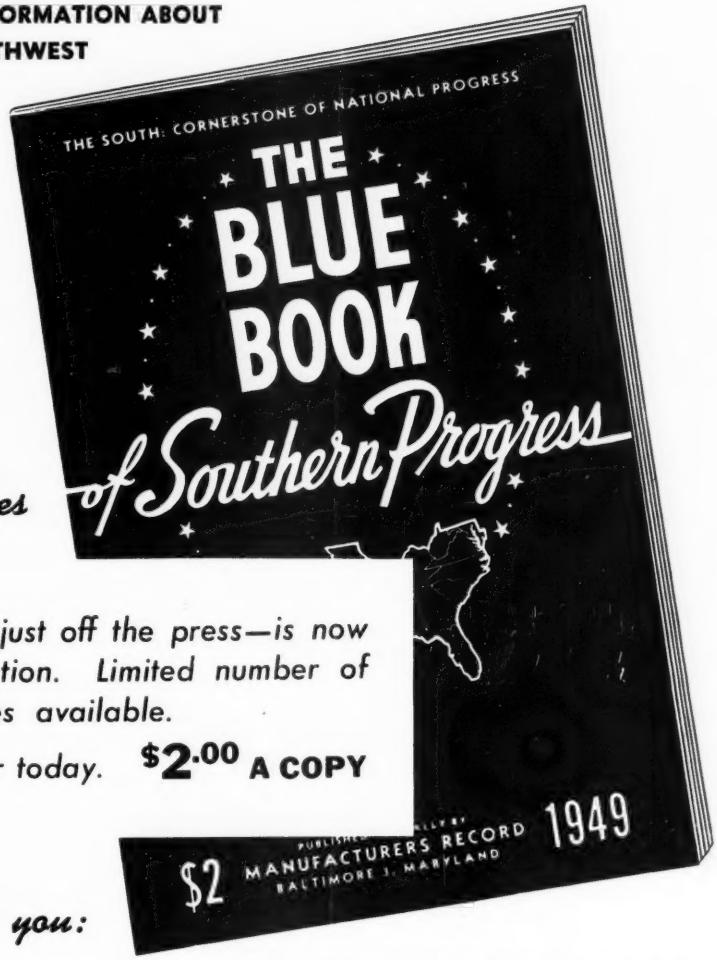

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MANUFACTURERS RECORD
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Thew Shovel School Dedicated

Left to Right: Marion C. Chavis, of Jeff Hunt Machinery Co., Columbia, S. C.; W. M. Ross, of Carolina Tractor & Equipment Co. of Raleigh, N. C.; Claude B. Crater and Lewis F. Buntley of Thompson & Green Machinery Co., Nashville, Tenn., had the pleasure of helping to dedicate the new classroom located in Thew Shovel Company's new office building in Lorain, Ohio. R. G. Thibaut, extreme right, director of service school, is shown pointing out design and construction improvements of the Lorain Model TL-30 clutch shaft. A banquet was held in honor of the graduating members of the school.

Fallsway Equipment Appointed Maryland Heil Distributor

Fallsway Spring and Equipment Co., Fallsway and Lexington St., Baltimore 2, Md., has been appointed exclusive distributor for the Heil line of dump bodies and construction equipment for all of Maryland except those counties immediately surrounding the District of Columbia, according to an announcement by O. R. O'Connor, sales manager of the new agency. David E. Steele is the company's president.

District Sales Managers Made by U. S. Rubber

Ten district sales managers have been appointed by the electrical wire and cable department of United States Rubber Co., to supervise sales of electrical wire and cable in major cities throughout the country.

The appointments give the company's electrical wire and cable department an independent nation-wide sales organization equipped for the fastest possible service to electrical wire consumers, C. W. Higbee, manager of the department, said.

The new sales managers and their respective territories are as follows: C. W. Short, Boston; J. D. Droban, New York; H. J. Cluver, Philadelphia and Baltimore; C. C. Hronek, Atlanta, Birmingham and New Orleans; E. W. Renfree, Detroit, Cleveland and Pittsburgh; G. E. Hubrig, Chicago, Milwaukee and Minneapolis; L. E. Dickinson, St. Louis, Cincinnati and Indianapolis; A. B. Gangwer, Kansas City, Tulsa, Omaha and Denver; R. S. Keith, Dallas and Houston; and L. M. Giuliana, Los Angeles, San Francisco, Portland, Seattle and Salt Lake City.

Nixon Named Testing Engineer

Maurice W. Nixon has been named chief field testing engineer of the New Holland Machine Co., farm machinery manufacturing subsidiary of the Sperry Corp.

A native of Brooklyn, N. Y., Mr. Nixon gained his experience as a member of engineering staffs in Rockford, Ill.; J. I. Case Co.; Ithaca, N. Y., Morse Chain; Syracuse, N. Y., Niagara Hudson Power Corp. and New York, Empire State Gas and Electric Co.

He joined the Hertzler & Zook division of Sperry Corp., Belleville, Pa., in 1946.

Russ Beck, of Jaeger, Dies

Russ Beck, southeastern district representative for Jaeger Machine Co., died suddenly on March 4, at Raleigh, N. C. Russ, whose home was at Richmond, Va., was widely known throughout the Southeast, where he had been active in the paving and construction equipment business for many years. He was 48 years old.

Spring—Tractor Tune-Up Time

Before launching spring operations contractors are urged to spend a little time tuning-up their valuable tractors and allied construction units. A word to the wise is usually sufficient so the Allis-Chalmers Tractor Division Service Department offers the following tractor tune-up suggestions.

Debris in the radiator core is a primary cause of high operating temperature, and a tractor can't operate with a fever any better than you could. First straighten the fins and flush the cooling system. Check for leaks and flabby hoses. If the thermostat isn't working, it should be replaced because chills are just as bad for a tractor as is a high fever.

Minor breakdowns are as irksome as a sore thumb so check the fan blades and straighten them if they are bent. Check the fan bearings, put on new belts if necessary or at least adjust them. Now look down at the engine mountings—they should be sound and securely fastened. A tractor can't work well with sloppy mountings any more than the boss can work well in a wobble-jawed swivel chair.

When a fella gets a cold, his nose swells up, he breathes through his mouth and gets a belly-ache—and so it often is with a Diesel. Check the air cleaner and pipes for leaks. Your tractor will run much better and longer on clean air than you might suspect.

Fuel and oil pumps are somewhat like the heart of a man—when they quit the tractor is a dead duck! Check the gauges. Low oil pressure may merely indicate a faulty gauge or, on the other hand, the need of a complete engine overhaul.

When you reach the engine, get the outside just as clean as you do the inside. An oily dirt covering becomes very effective insulation and makes engine cooling a difficult task. Tighten up oil and fuel lines, inspect seals, conduct a power check and observe oil consumption which may also indicate an overhaul job is necessary. If it's a two-cycle Diesel engine, it will pay to clean the air box and port holes in the cylinder liners. Through the port holes you can look for broken rings and scored pistons.

Stiff joints in steering clutches, engine clutch, and brake linkage should not be tolerated. Take apart the linkage and get new pins if the old ones are worn. At least clean off the rust and oil the joints. By curing the tractor's rheumatism you eliminate one cause of your stiff shoulders and thereby kill two birds with one stone. Likely the engine clutch, steering clutches and brakes need adjustment. While you have the linkages apart, adjust them and make a note to keep them adjusted through the entire season. Now give the tractor a complete transfusion with summer grades of oil in the engine, transmission, and final drives for that lasting vitality.

Old Man Winter really socks it to the battery. Many batteries either give up entirely or are too weak to do much good after fighting sub-zero blasts. Clean up the batteries, recharge them if possible, and then tidy up the terminals, clamps and wiring harness; check the light switch, starter, generator and ammeter if you expect your equipment to pay off on the job.

The tracks will need checking also. Maybe the grousers are worn and can't hold, or perhaps the shoes aren't bolted tightly to the rails. Loose shoes are as uncomfortable on a tractor as shoes with loose strings are on GI Joe on a nineteen mile hike. Pins and bushings with excessive wear should be turned or replaced. Or perhaps a complete new set of tracks should be ordered for the coming season's work. The truck wheels and support rollers should be checked for free play and repaired, if necessary. Then check the adjustment of the tracks and operation of the track release mechanism.

After you've got your equipment all tuned up, relax and realize that your preventive maintenance will undoubtedly avoid a lot of trouble during the coming season. All you can do now is haul yourself down to your own family doctor's office and get yourself tuned up to meet the same strenuous life you've just prepared the tractor for.

Walden Paape Dies

Walden W. Paape, domestic sales manager of Euclid Road Machinery, Cleveland, Ohio, died suddenly last month at his home in Willoughby, Ohio. A native of Lake Forest, Ill., and an engineering graduate of the University of Illinois, Mr. Paape was prominently identified with the construction industry for the last 32 years.

He joined the Euclid Road Machinery Co. in January 1945 as district manager and was appointed domestic sales manager in 1947. Previously, he had served in executive sales capacities with LaPlant-Choate Manufacturing Co. and Caterpillar Tractor Co. Prior to those associations, he was engineer for the Peoria Park Board.

Letters

March 14, 1949.

Samuel A. Lauver, *Managing Editor*
CONSTRUCTION,
Baltimore 3, Md.

I have just received the two copies of CONSTRUCTION Magazine containing the excellent story and layout on the B. & O.'s new Elk Creek Spur. We are indeed indebted to you for the excellent coverage. Your story is the first complete one on the project.

CARROLL BATEMAN,
Baltimore and Ohio Railroad.

Bell-Lott Furnishes Fleet of Allis-Chalmers Tractors

Bell-Lott Road Machinery Co., of West Columbia, S. C. has furnished nineteen Allis-Chalmers tractors for use in clearing the reservoir of Wolf Creek Dam now under construction near Burnside, Ky. The two principal South Carolina contractors on the job are Robert Lee, Inc., of Manning, S. C., and Boyle Construction Co., of Sumter, S. C., who are clearing approximately 28,000 acres of land.

The $62,000,000 Wolf Creek project is one of six in the Cumberland River valley and is part of a more comprehensive plant for controlling floods in the Ohio River basin. The structure will impound 6,000,000-acre-feet in a 64,000-acre reservoir. When finished, it will be more than a mile long, of which 1,796 feet will be masonry and 3,940 feet, earth fill. Maximum height will be 240 feet. Construction is well past the two-thirds mark.

New Officers Elected by Charleston Contractors

New officers of the Charleston Building Contractors Association, of Charleston, W. Va., are W. Elliott Abbitt, president, of Charleston; Earl T. Browder, secretary-treasurer, of St. Albans, and Evan Harris, of Knollwood, member of the executive committee, succeeding Mr. Charles J. Kuhn.

Many new members have been added to the Association this year and it is hoped to have a local plan room in operation by mid-summer, according to Mr. Browder, who says Charleston contractors will be comfortably busy this year, although much work has been shelved due to high costs. "We are not taking the cost of building construction higher, if we can help it," he declares.

Nashville Architect Dies

Harry C. Hibbs, prominent architect of Nashville, Tenn., died suddenly last month. He was a Fellow in the American Institute of Architects.

Lundgren Appointed

The Kuljian Corporation, Engineers and Constructors, Philadelphia 21, Pa., announces appointment of Edwin Lundgren as Washington, D. C., representative with offices at 1115 K Street N. W.

EQUIPMENT AT WORK

By L. H. Houck

MECHANIZATION—Above—Lumber yard in Kansas City handles retail orders with fork lifts and carriers. Labor costs are reduced 25 per cent or more.

GRADING—Above—Model C. Tournadozer with 180-horsepower Buda engine makes short work of a Texas airport job.

SNOW—Above—Lull loader on an Oliver industrial tractor solves snow removal problem in West Virginia.

PLOWING CABLE—Below—Jeep equipped with ditcher and two men can lay and cover five miles of telephone cable daily.

KENTUCKY OIL—Below—One of more than 15 Bucyrus-Erie 24-L drills near Owensboro, Ky., owned by Ohio Oil Co.

MOWING—Below—One International power mower and two drawn mowers make a three-cut swath on highway in southern Missouri.

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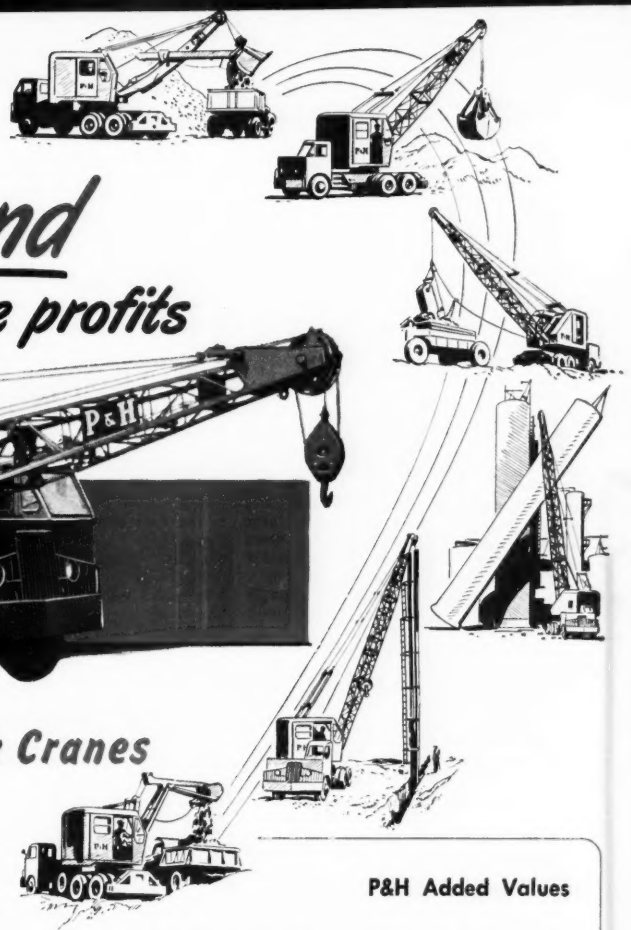

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of South Carolina

FORT PIERCE, Florida
Drainage Machy. & Supply Co.
P. O. Box 782

EDINBURG, Texas
Crow Iron Works

Shamrock Hotel Opened at Houston

(Continued from page 31)

boilers, each with a capacity of 26,500 pounds of steam per hour. The natural gas used for fuel leaves practically no deposit on the outside surface and thus requires no soot-blowing equipment. Heat release is 33,300 b.t.u. per furnace cubic foot per hour. Walls and roof are water-cooled; the floor is of ventilated air-cooled design. Webster gas burners and combustion control are installed. Expected boiler efficiency is 77 per cent. Flue gases leave the boiler at 478 degrees Fahrenheit.

Air conditioning turbines require 21,600 pounds of steam per hour. As much as 7,000 pounds per hour can be drawn off from the turbines at a pressure of 40 pounds per square inch to be used for water heating or other purposes. Since cooking is done in the apartments, large quantities of fresh air are flooded down the corridors and exhausted. A proportion of the air is partly dehumidified by a chilled water coil. Another stream is passed through a lithium chloride dissiccator.

Six Westinghouse electric elevators are installed for guests. There are two service elevators. The six position telephone switchboard has 50 outside lines, plus 10 long distance trunk lines. The hotel system is equipped with 880 manual and 150 dial 'phones. Teletype machines are available to Shamrock patrons. Those who have such connections in their offices may make contact directly from the hotel.

Water is obtained from two wells, each supplying 1,500 gallons a minute. The hotel swimming pool is 165 feet long, with a deep end width of 62 feet, a shallow end width of 142 feet. Its water content is approximately 750,000 gallons. Sand filters, chlorine purification and an underwater vacuum system are installed.

Large amounts of tile were used. In the patrons' bathrooms are 66,000 square feet; in the public toilets, 1,800 square feet; in the personnel toilets, 5,500 square feet, of which 500 feet is non-slip. Structural glazed wall tile in the basement totaled 26,000 pieces. In the kitchens are 55,000 pieces of structural glazed tile, as well as 16,000 square feet of quarry tile in the floor and 1,600 feet of base tile. Acme Brick Co. supplied the structural tile.

The laundry can handle 100,000 pounds a week. About one-half will be hotel laundry; the balance outside and patrons' work. Equipment includes two 42- by 84-inch washers, two 42- by 54-inch washers, one 42- by 36-inch and one 30- by 30-inch, single compartment washer; three extractors; two flatwork ironers; nine open-end drying tumblers and numerous lesser units. A monorail system eliminates practically all manual lifting and carrying. The dry cleaning plant is 67 by 22 feet.

On the main floor are the lobby, shops, Emerald, Shamrock and Grecian rooms, Cork Club, Pine Grill and the promenades; on the mezzanine, offices and beauty salon; on the third floor, dining rooms and offices. Bedrooms occupy the fourth to eighth floors; doublettes, the ninth to thirteenth floors; suites, the thirteenth to fifteenth; and apartments, the sixteenth to eighteenth floors.

Glenn McCarthy, the Shamrock's owner, is 41 years of age. Born near the famous Spindletop oilfield, he is the son of a driller there. It was in the oil fields where he made his fortune. His operations include exploration, drilling, production, manufacture, transmission and sales. He also owns a publishing company, a radio station, motion picture producing company and a Houston skyscraper.

A neon sign with letters three by eight feet, 255 feet above grade marks the hotel from a distance of 10 to 15 miles by air, five to eight miles on the ground.

Concrete Mat Handling

(Continued from page 37)

features of the handling and transporting of the concrete mat by tractor and mat trailer needed improving. For instance, during and after rains it was found that the surface of the casting field was badly cut up by the steel tracks of both the trac-

tor and trailer. This was particularly noticeable where it was necessary for the unit to make sharp turns.

It was also found that in order to facilitate the angle iron on the bottom of the grappler frame getting underneath the tier of mat that it was necessary to make a slight excavation along the sides of the tier. This operation proved expensive and even when mechanical means of excavating were devised it was objectionable in that the material excavated further marred the surface of the casting field.

To overcome the effects of the steel tracks on the surface of the field the design of the mat trailer was changed and four rubber tires were used in place of the Athey wagon tracks. This was used for a while in conjunction with the tractor but during the past working season the conventional type tractor was discarded and a rubber tired Tourneaudozer without the blade was substituted, giving an all rubber unit which reduced wear and tear on the surface of the casting field and speeded up hauling from about 3 miles per hour with the old tractor towed unit to 12 to 15 miles per hour with all rubber tired unit.

A study was made of the cost of excavating underneath the edges of the mattress and it was found that wooden pallets could be constructed and used at an overall saving considering the reduced maintenance on the surface of the casting field and the increased speed with which the tiers of mat could be picked up. The pallets have 2 inch decking bolted to 4 by 4 inch runners with the decking extending beyond the runner a sufficient distance for the grappler frame angles to secure a firm purchase beneath the decking. At the present time the pallets are loaded on the barges along with the tiers of mat and their use has materially expedited mat handling operations. When the mat has been used the pallets are returned to the casting field on the empty barges.

This has been the development in the past dozen years in the handling of articulated concrete mattress by the Corps of Engineers on the lower Mississippi River. The progress made in handling is only a part of the progress which has been made in the mattress casting and placing operation but the improvement of this feature alone has contributed appreciably to the progress of the overall operation.

Coosa River Plant

(Continued from page 30)

of Birmingham. Insulation on the piping is by Brooks-Fisher Co.; insulation on the tanks, by North Brothers, both of Atlanta. Alfons Custodis Chimney Co., of New York, erected the brick stack. Babcock & Wilcox Co., also New York, is furnishing the bark burning boiler; Combustion Engineering Co., the recovery boiler.

The two paper machines are being built by Beloit Iron Works, of Beloit, Wisc.

Forces of the Daniel-McGraw organization have worked more than one million man-hours with no fatalities. In fact, the severity and frequency rate of accidents so far is less than one-third of the national average for lost-time casualties. A hospital maintained at the main construction office has facilities for treatment of all but major injuries occurring at both the Coosa project and Beaunit Mill project being done about two miles away by the Daniel concern.

Sirrine representatives on the job are J. W. Cantrell, resident engineer; K. G. Taylor, civil engineer, and W. F. Hughes, mechanical engineer. One of the oldest and largest firms of its kind in the country, the Sirrine organization now has about 200 engineers in its eight departments. Estimates indicate at least 500,000 man-hours and several miles of paper were consumed in preparing plans for the Coosa River paper mill. (S.A.L.)

Eternal vigilance is the price of liberty.
—John Philpot Curran

Romer Heads A. G. C. Branch of Baltimore Builders

The Baltimore Builders Chapter of the Associated General Contractors of America has opened offices at 104 West Madison Street, Baltimore, and have appointed Henry D. Romer its manager. Originally from Omaha, Nebr., Mr. Romer for the past two years was connected with the New Jersey Contractors Association. During the recent war, he headed the Labor Relations Department of the Middle Atlantic Division Office, Corps of Engineers. Mr. Romer is a graduate of the Columbus University Law School, Washington. Current activities include new agreements with the various building trades. Plans for future expansion are now being worked out.

First Quarter Contract Value Up in the South

(Continued from page 11)

as compared with the $22,905,000 for February and the $27,336,000 for March of 1948.

Problems of the construction industry are still rampant, but the consensus seems to be that prices are stabilizing, materials are becoming more plentiful for the most part, except perhaps for steel, the prospects of more productive labor are in the offing, as well as still more government participation or interference in the economic affairs of the nation.

A review of some phases of federal activity discloses just how the government is responsible for large amounts of construction. Of the more than $100,000,000 allocated to approximately 1,000 projects under the Federal Aid Airport Act, $67,000,000 is for 640 projects now under construction and $26,500,000 in federal funds had been expended on partial and final payments on 215 projects.

The United States is now embarked on a hospital construction program for which over $400,000,000 in total construction costs are involved. The federal share is more than $128,000,000 for 703 projects, says George L. Read, chief construction engineer of the Public Health Service. About twenty per cent are under contract and a few completed.

The Rural Electrification Administration has a total of $233,000,000 not yet lent and President Truman has asked an additional $350,000,000 for rural electrification in the next fiscal year. Referring to the program as "tremendous," J. K. O'Shaughnessy, head of the R. E. A. engineering division, declared "there are no signs of it tapering off."

According to Thomas H. MacDonald, Commissioner of Public Roads, "there appears little doubt that during the present year the rate of work actually put in place will reach at least the rate now authorized by Federal legislation," $450,000,000 of Federal aid.

"Price trends in highway construction climbed steadily upward during the calendar year, registering practically the same amount of increase in 1948 as 1947 had increased over 1946. From a composition mile index of 122.9 in 1946, prices rose 17.5 points to 140.4 in 1947, and another 17.8 points in 1948, to 158.2 for the year."

Estimates by Raymond M. Foley, Housing and Home Finance Administrator, show the current year's housing construction at 875,000 units. Last year, about 930,000 units were produced. He does not feel that the market for houses has dropped but that "its effectiveness is reduced by cost and price," with all signs pointing to housing cost as too high.

All these large federal expenditures seemed to emphasize the statement made by D. W. Winkelman, retiring president of Associated General Contractors, that the trend toward more government will continue and greater control of much of America's economic life will be exercised in the future. "One of the paradoxes of our times," he observed, "is that we now feel it necessary to defend more vigorously than ever before a way of life here which has made this a great nation."

Guy C. Kiddoo, a Chicago bank vice president, who said his institution probably does more business with contractors than any other, reported to the Associated General Contractors that one of his customers bid $750,000 on a job the architects had estimated at $850,000 and said some recent bidding seems to indicate that more than ample allowance has been made for possible lower future costs.

A similar situation prevailed on one of the large heavy construction projects on which bids were opened by the Washington office of the Corps of Engineers. The low bid of $862,727 submitted for completion of the partly constructed Savage dam in western Maryland was far below the government estimate of $1,676,043. The Maryland State Roads Commission, however, had exactly the opposite experience. Bids for the substructure of the proposed Chesapeake Bay bridge were so far out of line that the engineers recommended their rejection.

PUBLIC ENGINEERING

(Dams, Drainage, Waterworks, Sewers, etc.)

	March, 1949 Contracts Awarded	March, 1949 Contracts to be Awarded	Contracts Awarded First Three Months 1949
Ala.	$182,000	$45,000	$1,728,000
Ark.	517,000	1,970,000	1,757,000
D. C.	50,000	65,000	924,000
Fla.	1,604,000	73,130,000	5,601,000
Ga.	1,544,000	1,730,000	4,273,000
Ky.	1,238,000	3,622,000	2,873,000
La.	2,066,000	3,680,000	9,655,000
Md.	635,000	1,165,000	4,005,000
Miss.	751,000	9,173,000	3,701,000
Mo.	1,052,000	2,330,000	3,508,000
N. C.	2,358,000	1,342,000	4,582,000
Okla.	295,000	2,404,000	8,007,000
S. C.	589,000	695,000	1,931,000
Tenn.	6,225,000	4,213,000	7,267,000
Tex.	10,118,000	10,326,000	26,912,000
Va.	2,811,000	1,625,000	4,072,000
W. Va.	.....	300,000	85,000
TOTAL	$35,038,000	$117,815,000	$90,881,000

ROADS, STREETS, BRIDGES

	March, 1949 Contracts Awarded	March, 1949 Contracts to be Awarded	Contracts Awarded First Three Months 1949
Ala.	$215,000	$.....	$425,000
Ark.	.....	.....	84,000
D. C.	.....	.....	768,000
Fla.	.....	521,000	1,709,000
Ga.	.....	320,000	5,650,000
Ky.	1,985,000	4,934,000	4,728,000
La.	3,302,000	3,656,000	10,015,000
Md.	3,467,000	5,315,000	10,013,000
Miss.	502,000	1,061,000	842,000
Mo.	1,190,000	620,000	4,044,000
N. C.	1,274,000	.....	6,234,000
Okla.	675,000	277,000	3,711,000
S. C.	508,000	950,000	4,164,000
Tenn.	180,000	1,000,000	8,210,000
Tex.	7,022,000	7,233,000	28,098,000
Va.	1,137,000	460,000	4,416,000
W. Va.	525,000	250,000	2,144,000
TOTAL	$21,782,000	$26,597,000	$94,708,000

INDUSTRIAL

(Including Private Utilities)

	March, 1949 Contracts Awarded	March, 1949 Contracts to be Awarded	Contracts Awarded First Three Months 1949
Ala.	$1,072,000	$7,800,000	$3,217,000
Ark.	1,300,000	.....	1,400,000
D. C.	.....	.....	.....
Fla.	901,000	15,000,000	4,957,000
Ga.	90,000	1,400,000	1,910,000
Ky.	.....	490,000	338,000
La.	648,000	11,900,000	7,279,000
Md.	2,074,000	2,019,000	7,176,000
Miss.	566,000	15,710,000	854,000
Mo.	660,000	200,000	1,781,000
N. C.	1,120,000	150,000	20,817,000
Okla.	250,000	6,214,000	2,196,000
S. C.	1,800,000	10,050,000	3,816,000
Tenn.	70,270,000	860,000	73,956,000
Tex.	10,194,000	11,930,000	31,577,000
Va.	30,000	625,000	905,000
W. Va.	575,000	.....	750,000
TOTAL	$91,490,000	$84,348,000	$162,929,000

PRIVATE BUILDING

(Assembly, Commercial, Residential, Office)

	March, 1949 Contracts Awarded	March, 1949 Contracts to be Awarded	Contracts Awarded First Three Months 1949
Ala.	$751,000	$2,135,000	$3,412,000
Ark.	40,000	650,000	1,215,000
D. C.	.....	3,650,000	275,000
Fla.	10,851,000	10,287,000	37,583,000
Ga.	2,098,000	3,126,000	9,556,000
Ky.	168,000	9,600,000	438,000
La.	2,734,000	3,245,000	7,261,000
Md.	3,379,000	2,835,000	12,182,000
Miss.	677,000	1,500,000	1,695,000
Mo.	1,360,000	899,000	4,313,000
N. C.	1,001,000	5,700,000	5,471,000
Okla.	47,000	1,915,000	4,113,000
S. C.	935,000	2,788,000	3,004,000
Tenn.	1,022,000	3,931,000	6,496,000
Tex.	16,722,000	14,930,000	76,363,000
Va.	330,000	775,000	3,427,000
W. Va.	50,000	75,000	345,000
TOTAL	$42,165,000	$68,131,000	$177,149,000

PUBLIC BUILDING

(City, County, State, Federal; Hospitals; Schools)

	March, 1949 Contracts Awarded	March, 1949 Contracts to be Awarded	Contracts Awarded First Three Months 1949
Ala.	$4,713,000	$550,000	$9,911,000
Ark.	237,000	550,000	2,599,000
D. C.	1,121,000	4,434,000	25,493,000
Fla.	3,015,000	6,400,000	13,965,000
Ga.	850,000	2,165,000	4,799,000
Ky.	1,049,000	14,973,000	1,949,000
La.	1,344,000	8,920,000	6,972,000
Md.	1,371,000	14,630,000	4,132,000
Miss.	1,651,000	9,830,000	9,160,000
Mo.	1,223,000	2,980,000	3,760,000
N. C.	3,677,000	12,565,000	14,288,000
Okla.	1,461,000	2,121,000	8,949,000
S. C.	472,000	1,715,000	3,002,000
Tenn.	6,407,000	3,185,000	11,577,000
Tex.	12,773,000	35,577,000	33,497,000
Va.	3,229,000	9,365,000	7,761,000
W. Va.	30,000	50,000	511,000
TOTAL	$44,626,000	$130,008,000	$162,357,000

Watauga Dam

(Continued from page 27)

Bottom Dump Trucks — twenty 13-cubic yard, diesel;

End Dump Trucks — three 6-cubic yard, diesel and twenty-eight 10-cubic yard, diesel;

Trucks (Concrete Mixers)—seven 2-cubic yard, gas;

Stake Body Trucks—ten 3 to 10-ton, gas;

Portable Compressors—three 315 c. f. m., diesel, and two 500 c. f. m., diesel;

Stationary Compressor—one 2600 c. f. m., electric, and one 3000 c. f. m., electric;

Diamond Core Drills—three, gas;

Blast Hole Drills—two 6-inch and two 9-inch;

Drills (Wagon Mounting) — twenty-three 1¾-inch;

Drills (Tunnel Drifters)—twenty-eight;

Carrying Scrapers—three 12-cubic yard;

Shovels—four 1½-cubic yard, diesel; five 2 cubic yard diesel, three 3-cubic yard diesel;

Tunnel Mucking Machines — two ⅝-cubic yard, 75 h. p. electric;

Elevating Graders—one 22-foot, gas, one 25-foot, gas, one 32-foot, diesel;

Patrol Graders—three 12-foot, diesel;

Sheepsfoot Tampers—seventeen 2-drum;

Disc Harrows—fourteen 26-inch;

Cranes (Truck Mounted)—two, gas;

Stiffleg Derricks—two, 27-ton, electric;

Derrick (Gug)—one, 45-ton, electric;

Cone Crushers—two 3-foot;

Roll Crusher—one 40 by 22-inch;

Jaw Crusher—one 30 by 42-inch;

Gyratory Crusher—one 16-inch;

Vibrating Screens—one 4 by 10-foot, 3-deck; one 5 by 10-foot, two-deck; one 4 by 10-foot, 1-deck;

Concrete Batching Plants — two 2-cubic yard;

Manufacturers of the various types of construction equipment used at Watauga include the following:

J. D. Adams Co.—graders;
Allis-Chalmers Manufacturing Co.—screens;
American Hoist and Derrick Co.—derricks;
Austin-Western Road Machinery Co.—graders;
Blaw-Knox Co.—batching plants;
Bucyrus-Erie Co.—drills;
Caterpillar Tractor Co.—tractors, graders;
Chicago Pneumatic Co.—compressors;
Diamond T Motor Car Co.—trucks;
Diamond Iron Works Co.—screens;
Euclid Road Machinery Co.—trucks, graders;
Gardner-Denver Co.—drills;
Harnischfeger Co.—crane;
Ingersoll-Rand Co.—drills;
Jaeger Machine Co.—compressor;
Koehring Co.—shovels, trucks;
R. G. LeTourneau, Inc.—tampers, shovels;
Lima Locomotive Works—shovels;
Marion Steam Shovel Co.—shovels;
Northwest Engineering Co.—shovels;
Nordberg Manufacturing Co.—crushers;
Rome Plow Co.—harrows;
T. L. Smith Co.—crushers;
Sullivan Machinery Co.—drills, compressors;
Worthington Pump and Machinery Corp.—compressors.

Health Center Bids Soon

(Continued from page 34)

tients' outdoor recreational area, and occupational therapy units.

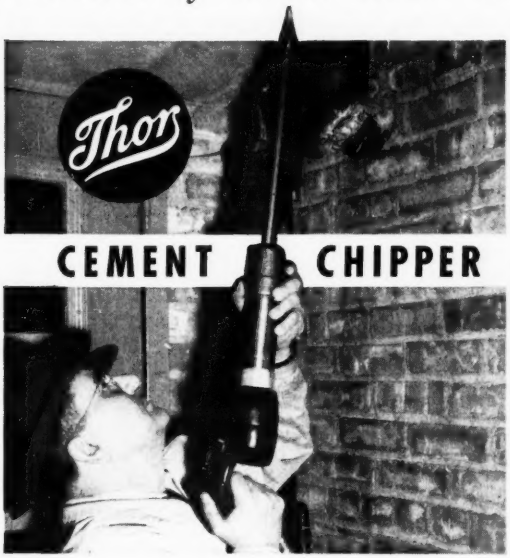
Administration, service and clinical purpose spaces generally will have partitions of tile and plaster and asphalt tile floors. Ceilings and areas where quiet is essential will be acoustically treated. The laboratories generally will have metal wainscots for outside walls with metal division and corridor partitions. Partitions will be demountable and can be reassembled where needed. An important feature of this metal partitioning is its flexibility. Rooms entirely appropriate for office or research laboratory space can readily be assembled.

A wide range of adaptability for changing needs in laboratory research will be afforded by the demountable partitions and equipment, module construction, grouped service line outlets at regular intervals and standardized laboratory benches. Heating elements will be placed below the window sills in metal enclosures. Floors will be asphalt tile and the corridor ceiling will be acoustically treated.

The entire building will be air conditioned. Electric current will be obtained from commercial sources and standby equipment will be installed for emergency needs. Lighting in the public areas, administrative offices, research sections and laboratories will be fluorescent. In the patient rooms, general lighting will be of the indirect, incandescent type. Metal in-swinging casement windows will be used and the doors will be hollow metal and aluminum.

The Clinical Center is set back 1,600 feet from the main highway. Access will be by a primary roadway leading from the Rockville Turnpike opposite to and connecting with the entrance roadway to the National Naval Medical Center. To avoid highway hazards, this access road will later be depressed and will underpass the Turnpike, with ramps for entrance to or exit from east and westbound through-traffic lanes. The underpass and ramps also will be available to automobile traffic entering or leaving the Naval Medical Center.

. . . the smoothest Power Punch delivered by an Air Hammer!



FASTER PENETRATION—This hammer's piston *knows where it's going* every split second of its high speed travel. It's "with" the air from start to finish. No "kick-back". Maximum power applied to *hammering!*

EASIER HANDLING — Available in 1", 2" and 3" stroke (3" stroke weighs only 15 lbs.!) Compact design, controlled power, make it safe, easy and simple to work with even in tight quarters, on ladders, on scaffolding. Thor retainer *locks in* the steel for complete safety.

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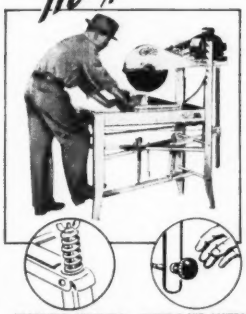

PRESSURE EQUALIZER SPRING
That smooth, sensitive cutting action on every Clipper is a result of this exclusive Clipper Feature.

ADJUST-A-CUT CONTROL
Just pull the knob to instantly raise or lower the cutting head for materials of varying sizes.

Yes, you can slice through any masonry material in a matter of seconds. Nine new 1949 Clipper Models are available to answer any masonry cutting problem encountered. Intricate cuts are made smooth and easy, because the 1949 Clippers combine the exclusive Pressure Equalizer Spring and Multiple Cutting action with the new "Adjust-A-Cut" control; "Streamlined" Ball Bearing Conveyor Cart; and the "Snap-on" Blade Cover to make possible the fastest masonry cutting job ever performed.

DUSTLESS CUTTING WITH CLIPPER
When job requirements call for cutting both wet and dry, see the real 100% answer to masonry cutting—the 1949 Model HD, the Dustless Wet or Dry Cutting Clipper.

FREE TRIAL
You can have a Clipper shipped on Free Trial direct from your nearest Clipper Factory Branch. Priced from $195.00 — Write today for illustrative literature.

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A. G. C. Meeting at New York

(Continued from page 26)

"can offer a better product at a lower price. The industry may answer that it cannot afford to do this. Implicit in this answer is the qualification 'at present efficiency.' Efficiency is not a static thing. The quality and the prices which an industry can offer at the efficiency of 1948 are not necessarily the quality and prices which it can offer at the efficiency of 1949.

"There is persuasive evidence that the construction industry, as well as the country as a whole, needs lower costs. The rate of private construction is tapering off, and in order to sustain the volume of private building in 1948 at levels of 1948, the construction industry must offer buyers more for their money."

Federal Projects Discussed

Federal projects were discussed in detail by a number of government officials, including Thomas H. MacDonald, commissioner of public roads; Rear Admiral J. J. Manning, chief of the Bureau of Yards and Docks; George L. Read, chief construction engineer of the division of hospital facilities, United States Public Health Service; Phillips Moore, director of the office of airports, Civil Aeronautics Administration; J. K. O'Shaughnessy, chief of the engineering division of the Rural Electrification Administration, and Raymond N. Foley, Housing and Home Finance Administrator.

Roads Commissioner MacDonald said there is little doubt that during the present year the rate of federal aid highway work actually put in place will reach at least the $450,000,000 authorized by Federal legislation, this to mean a value of $850,000,000 in total cost. On the subject of shortages, his view is that steel mesh reinforcement and cement may become an acute problem in the coming months, with bituminous materials and aggregates in adequate supply.

Navy Work Revealed

Admiral Manning revealed that $100,000,000 has been spent at the Inyoken guided missile test center; $34,000,000 at Point Mugu; that a huge new ordnance laboratory has been built at White Oak, Md., and an electronically shielded hangar has been finished at Patuxent, Md. Other Navy jobs now underway are a $13,000,000 aeronautical turbine laboratory at Trenton, N. J.; an underwater sound reference laboratory at Orlando, Fla., and facilities for cold weather research at Bellevue, D. C.

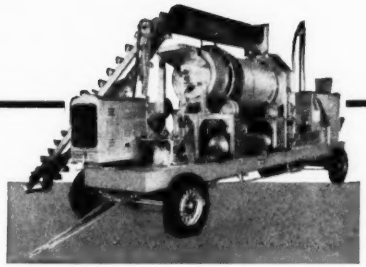
Contractors, he said, can help the Navy in its research by "giving us grist for our mill. We need new ideas that we can test. And it's more than probable that you have some right now that could be developed both to your own and the Navy's advantage. Heaven only knows that during the last war, the imagination and resourcefulness of construction engineers—in and out of the Seabees—enabled us to cut corners and beat deadlines from one end of the world to the other. You've got the same ability now as you did then. So deal us in. Write me a letter and we'll carry the ball from there."

Hospital Construction

The Federal government's share in current construction under the Hospital Survey and Construction Act is $128,000,000, with the entire cost of the projects placed at $400,000,000, according to Mr. Read, who said the program is "a state program" and that the role of Federal authorities "is largely that of guidance." About 20 per cent of the hospitals are under contract and a few have been completed, and "the program is growing."

The Director of the Office of Airports disclosed that since passage of the Federal Aid Airport Act in May 1946 Congress has appropriated over $100,000,000, which has been allocated to approximately 1,000 projects. Cost of the 640 projects under contract will be $67,000,000 in Federal funds, with a total of $26,500,000 in Federal money already expended for the 215 completed jobs.

(Continued on page 60)



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Almost any type of pavement can be repaired economically and efficiently with a White Portable Asphalt Plant. Asphalt, brick, concrete, macadam, can be easily patched or resurfaced.

It will match any bituminous surface. Produces for immediate hot application or makes mix for deferred cold laying.

Contains internally fired rotating dryer, pug mill mixer, bituminous heating kettle, volumetric measurement, air controls. Mounted on pneumatic tires, or furnished for stationary operation. Capacities 4, 8, 12, 25 tons per hour.

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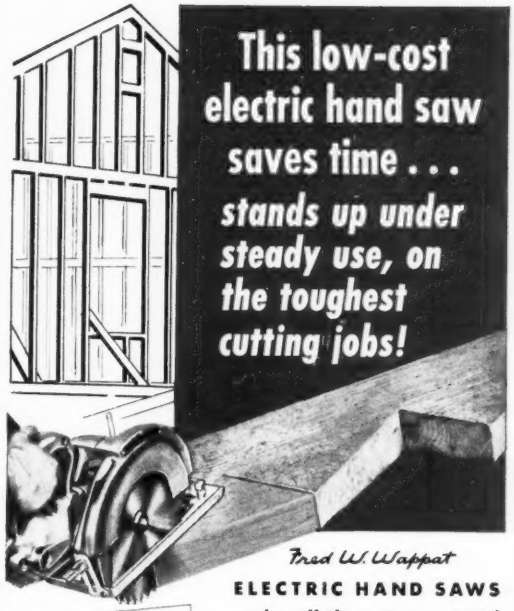

This low-cost electric hand saw saves time . . . *stands up under steady use, on the toughest cutting jobs!*

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ELECTRIC HAND SAWS make all the cuts you need *FAST and ACCURATELY!*

. . . cut tough materials, from wood to steel
. . . operate simply, safely, easily
. . . require minimum maintenance.

Model A-8"
2 5/8" cut
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Best recommendations for Fred W. Wappat Saws come from our thousands of users. For example—the E. H. Latham Co. says, "On Puerto Rico drydock job, one Fred W. Wappat Saw saved $1,100.00 in labor costs alone!"

Powerful Fred W. Wappat Electric Hand Saws are low in cost—high on quality—they're the product of over a quarter century's experience in making fine electric hand saws. Fred W. Wappat-designed gears, turbine-cooled motors, simple, single-point lubrication increase efficiency and minimize off-the-job repair time and general maintenance. Hundreds of thousands of feet can be cut before a Fred W. Wappat Saw needs attention other than lubrication and blade sharpening.

You make all angle and grooving cuts—*fast*, with predetermined accuracy. Thanks to practical, field-proven balance, you get easy, fatigue-free operation, saving time and money on awkward, hard-to-reach cutting jobs. And, you cut a wide variety of materials—wood, transite, concrete, light gauge metals, etc.

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A. G. C. Meeting at New York

(Continued from page 58)

Referring to the efforts of A. N. Carter, of the A.G.C. national staff, to expedite payments to contractors for work performed, Mr. Moore said everything possible is being done and regional offices have been given authority to make final payments without Washington approval. He cited a number of reasons why payments are delayed. These were failure of contractors to submit final estimates; to submit as-built constructed plans; of C.A.A. district engineers to make final inspections promptly; of sponsors to request federal funds for final payment; of C.A.A. auditors to make final audits immediately after completion.

Congress has been requested to appropriate $40,000,000 for construction and improvement of 218 small airports and 207 large airports, an inadequate amount to meet the backlog of sponsors' requests for Federal funds which total more than $200,000,000 for large airports alone. There is indication, the C.A.A. director said, that Congress will appropriate several million dollars to repair and rehabilitate approximately 28 airports damaged by the military during the war.

J. K. O'Shaughnessy outlined the present status of the rural electrification program. Since 1935, Congress has made $1,875,428,288 available for loan purposes. A total of $233,000,000 has not yet been loaned and President Truman has asked an additional appropriation of $350,000,000 for the fiscal year starting July 1, 1949, making the figure for possible loans over one-half billion dollars "if we can anticipate favorable action by the Congress." R.E.A. records show approximately 750,000 miles of distribution lines have been constructed to serve two and one-half million customers. During 1948 R.E.A. borrowers energized about 147,000 miles and this year will equal or exceed that figure.

R.E.A. "Support Lack" Scored

Rural Electrification Administration, Mr. O'Shaughnessy stated, has "keenly" felt the lack of support by the national contractors' association, but he admitted that "there must be good and sufficient reasons why an organization such as yours would not evidence interest in a multi-billion-dollar construction." Commenting on the "labor only form of contract," he said "some of the contractors who howled the loudest" have "since told me that they had really gotten to like it and hoped that we would continue to sponsor it.

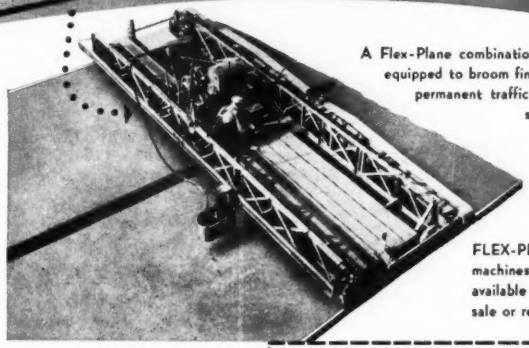
"But times have changed and the materials situation is such that contractors can get all materials for a job with the exception of conductor and possibly transformers. In view of this, R.E.A. has suggested to its borrowers that they return to the use of the labor and materials form of contract with the contractor furnishing all materials except conductor and transformers and I'm not so sure that we would object to the contractor bidding on transformers so long as they are readily available. Conductor, with the exception of solid copper, is not and will not be in easy supply for years to come."

875,000 Housing Units

Official records of Congress, it was pointed out by Mr. Foley, contain analyses showing the need for 15,000,000 or more housing units in the next decade, especially in the metropolitan areas. Production last year was about 930,000 units; this year, estimated at 875,000 units, al-

(Continued on page 62)

MECHANIZE BEHIND THE FINISHER



A Flex-Plane combination machine equipped to broom finish, install permanent traffic lines and spray cure.

• With Flex-Plane equipment you can mechanize the entire paving job . . . the modern high speed Flex-Plane finisher needn't outdistance the miscellaneous "end" jobs. The Flex-Plane mechanical tie-bar and dowel spotter, the vibratory joint machine and the combination spray machine will crowd the fastest paver. The completely automatic combination machine can broom, belt or drag burlap, install permanent traffic lines and spray cure. Don't let outmoded methods retard jobs nor run away with costs. For full information, return the coupon from this ad.

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WATER FEED CONCRETE SURFACER

MODEL WA

A portable electric machine equipped with "BERG" Model W Water Feed Head operating at low speed. Ideal for applications requiring wet rubbing of concrete surfaces. Other interchangeable "BERG" Heads available for dry rubbing applications at various speeds.

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The actual inherent strength of rail steel is fully harnessed for work in the Laclede Multi-Rib bar design. Rail steel rolled into bars with Multi-Rib design offers a yield strength in excess of 55,000 PSI—with greatly increased anchorage. Laclede Multi-Rib Reinforcing Bars meet the new ASTM Specification A 305-47T which provides a long-needed yardstick for anchorage in reinforcing bars, assures a more efficient use of steel.

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Modernize your steel reinforcing with Laclede Multi-Rib Steel

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A. G. C. Meeting at New York

(Continued from page 60)

though he says the industry can build 1,000,000 units, but operative builders, he stated, cannot do the job alone. In fact, the challenge is to bring down the cost, which housing officials feel is too high, but not a hopeless dilemma. "What we seek," he observed, "is more house for the money, not less house for less money, if the latter means merely cheapening the house to lower the price," and "it is important that general contractors explore the possibilities of participation in the program of cost reduction and of housing production."

To the general contractors, he said, the challenge is as great as that to the operative builders, the real estate developers, the financiers, labor, suppliers and government. The goal can only be reached if all work intelligently together. Pleading for "the most earnest exploration of all these possibilities," the Housing Administrator declared, "I am much encouraged by our progress thus far with the effort." We seek not just shelter but good living environment for all American families, and "we must rely on free American enterprise to do the job."

Douglas William Orr, president of the American Institute of Architects, attempted "to introduce some thoughts on collaborative effort—between the design professions and the general contractors—which could result in a definite contribution to the welfare of our society." Construction means and methods should be reexamined. Research of a kind now lacking should be inaugurated, especially to coordinate the various parts of the industry and to provide better communication within the industry.

Contractors, manufacturers and other elements of the construction industry, Mr. Orr averred, "must become design conscious; the design professions must become structure conscious; each has an obligation to the other. But included must be a consciousness of the social and economic aspects of public need. All have a responsibility to the general public."

Correlation Seen Needed

Summing up his remarks with the statement "the architectural and engineering professions and all elements of the construction industry are made up of men who have great funds of knowledge," the A.I.A. president said it should be correlated, used and exploited for the benefit of mankind.

Maj. Gen. Ernest O. Thompson, of the Texas Railroad Commission, emphasized the importance of oil to the construction industry. Without it, the present mechanized equipment could not operate, and without the mechanization, the industry could not produce "at such great savings in labor and cost to the buyers of construction. When construction and oil are in generous demand," he observed, "the economy of the country is in sound condition.

Oil Shortage Not True

"For many years you have, I am sure, been hearing the false cry that the United States was running out of oil. It simply isn't so." Texas alone has 111,322 producing oil wells and is able to produce about 500,000 barrels of oil in excess of market demand, although Texas law, as in many states, forbids production of

(Continued on page 64)

A. G. C. Meeting at New York

(Continued from page 62)

more oil than the market demands.

"We produce all that can be marketed. When more oil is needed, we will produce it. We now have a half-million-barrel active oil producing reserve ready at the turn of a valve." New discoveries and further development will continue to build up this ready reserve. Total oil production from the state of Texas in 1948 was 898,000,000 barrels. Along with this oil was produced 1,190,000,000,000 cubic feet of gas.

The oil industry is completing a new construction program costing more than $2,500,000,000, a necessary step because of greatly increased consumption, which last year was 622 gallons of gasoline per person and similar figures for other oil petroleum products. The gas industry will spend $3,000,000,000 during the 1948-1951 period with 80 per cent of the amount going for natural gas facilities.

Oil Output High

Current production in the United States is 5,363,000 barrels of oil a day in twenty-two producing states. In Texas are 1,482 separate producing oil fields, counting above ground and not considering the several separate horizons where oil is found under one field. Three hundred new oil fields were discovered in the country last year. Drillers are going ever deeper in the search for oil, and wells of 20,000 feet are in early prospect. Costs have increased from $5 to $30 a foot, yet gasoline is cheaper today than it was thirty years ago, not counting the tax.

Lauding the contractors as "builders of our arsenal of freedom," General Thompson declared "we now move into the new phase of this great adventure to help spread this conception of freedom and free enterprise throughout the world. You gentlemen with your skill, your enterprise and your daring know how are privileged to be in the vanguard of this worldwide procession of progress."

Jurisdictional Dispute Settlement

Success of the program for settling jurisdictional strikes was stressed by Richard J. Gray, president of the buildings and construction trades department of the American Federation of Labor. "We should all, contractors as well as unions," he stated, "use our very best efforts to hold stoppages of work because of jurisdictional disputes to a minimum. I assure you that this is the firm intention of the building and construction trades department.

"Personally, I shall do all in my power to see that this intention is fulfilled. By the time the joint committee which was provided for at the meeting of your representatives with the executive council of the Department in January has made its investigation and report, we should be in a position to go ahead with the revision of the plan. Certainly on one thing I hope we are all united. It is my firm opinion that the present plan should not, under any circumstances, be permitted to go out of existence until it is determined whether we can agree to sufficient changes and amendments to make it function in a fashion satisfactory to all."

Mr. Gray said there are close to 150,000 apprentices in training in the building trades and "there are clear indications that the productivity of labor has increased very materially in the past two years and is continuing to rise steadily." He urged support of the bill providing for erection of 810,000 housing units in the next six years and also preparation "for a possible not-so-rosy future" by supporting a "public works program which can go into operation without delay, if and when the need arises." (S.A.L.)

Chesapeake Bay Bridge

(Continued from page 5)

tection for the anchorage piers and cable back stays against possible damage from vessels navigating out of control. As additional concrete is placed for the upper sections of all piers and the underlying material removed by dredging through the open cells, the piers will sink to final position, resting upon the unyielding, confined sands of the bay bottom. This method of construction has proven highly successful on many major bridge projects of this country where similar characteristics of loading and foundation conditions were present.

The roadway, of reinforced concrete, will be 28 feet wide between curbs, thus affording ample width for two lanes of traffic to travel with safety and comfort at open-highway speeds. Furthermore, in the event it becomes necessary for a disabled vehicle to park upon the bridge, this width of roadway will be sufficient to permit two lanes of traffic to by-pass the stalled vehicle conveniently at controlled speeds. Emergency footwalks, 18 inches wide, collision type curbs and railings will be provided on each side of the roadway.

The people never give up their liberties but under some delusion.

—Burke

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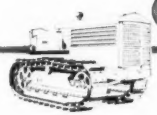

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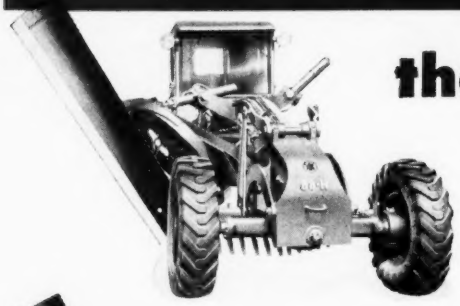

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